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THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR JANUARY 1863.

ART. I.—*Paracentesis Thoracis; a résumé of twelve years' experience.* By HENRY I. BOWDITCH, M. D. (Read before the Boston Society for Medical Observation.)

IN the *American Journal of the Medical Sciences*, April, 1852, I published an article on Paracentesis Thoracis, with cases. In January, 1854, I gave in the *American Medical Monthly* an analysis of twenty-five cases of the same. Still later I made further statements on the subject in the *Boston Med. and Surg. Journal*, 1857, and now I wish to give to the Society a brief *résumé* of the principal results of the operation, as performed 150 times on 75 persons during a period of nearly twelve years, viz., from April 17, 1850, to Dec. 17, 1861.

During the above period I have operated 150 times on 75 persons, and have seen other gentlemen operate on 10 more, making 160 operations on 85 persons.

Innocuousness of the operation.—I have never seen the least *permanent* evil resulting from any operation, and *only the slightest temporary* difficulties, such as pain, slight dyspnœa, stricture, or cough, &c. This, I think, shows the innocuousness of the operation by means of the exploring trocar and suction pump, as suggested by Dr. Wyman.

Frequency of the operation.—One lady (case formerly reported) I tapped 9 times during 8½ months; commencing when she was 4½ months pregnant, and in whom the orthopnœa was, several times, so great that death, I have no doubt, would have supervened within twenty-four hours, if the operation had not been performed. She is now tolerably well, but with a contracted chest, as is usual in chronic pleurisy.

In striking contrast with this case, as it regards the *frequency* of the operation, while resembling it in the number of times it was performed,

was the unique case of an elderly man, very recently under my care, and in which I tapped eight times in six weeks! The patient himself, a physician, earnestly and even solemnly demanded of me the operation as a mere means of relief to intense distress. As he jocosely remarked on one occasion, he considered it one of his "luxuries."

Cases in which the patient recovered wholly.—Twenty-nine out of the seventy-five patients got wholly well, apparently in consequence, chiefly, of the operation. The operation was performed generally when severe symptoms were manifest, and I was called in consultation. In a few, a great quantity of fluid was recognized by the physical signs alone, the rational having been slight; but, as the disease was chronic, an operation was deemed necessary. In all these cases, the operations seemed the *first step* towards a cure.

The character of the fluid and its influence on the prognosis.—In 26 out of the 75 *serum* was found; and 21 of these patients got wholly well. If after the first operation the fluid becomes purulent, an almost certain fatal prognosis should be made. I have seen six such cases. Four of the patients died, two were lost sight of, but, when last seen, were failing.

Pus was found at the *first* operation in twenty-four cases. Once, it was of the consistence of honey, but I easily drew it through the exploring tube. Seven of these patients recovered wholly; seven died; nine were relieved one or many times; but they had either a long and tedious illness, terminating usually in phthisis, or a fistulous opening, or a still doubtful result.

A *sanguinolent fluid* at the first puncture (and by that I mean a dark red thin fluid, evidently stained with blood, though not coagulating) I consider almost certainly fatal, and a consequence of some malignant disease of the lung or pleura.

There were seven of such cases. In six the patients died. In one there was a doubtful result, but apparently fatal tendencies were commencing. If the fluid is found sanguinolent at the second or any subsequent puncture, I deem it of comparatively *little* importance towards the prognosis.

A mixture of *bloody purulent fluid* at the first operation is usually fatal. Three cases, all fatal, occurred.

A *fetid gangrenous* fluid is very rare, only one case having occurred, and that fatal; but in this case infinite relief from horrible orthopnœa was obtained, and it never returned, though the patient sunk and died in a few days. Gangrenous pleura was found.

I have operated once in *pneumo-hydrothorax* with temporary relief and comparative ease for several days. Many theoretical objections may be urged against the operation in such a case. To such objections I have simply to answer that, as the operation can do no harm and may give much relief, I shall operate again in any case where the dyspnœa may be so great as to require it.

Cases where no fluid is obtained.—Finally, in seven cases I got no fluid. These cases occurred usually in the earlier operations, and the failure was often owing, I have no doubt, to the cautious and slow manner with which I plunged the trocar between the ribs, carrying thus the false membrane of the pleura costalis before the instrument instead of piercing it; so that a valve was really formed over the end of the canula. At other times I have little doubt that an error of diagnosis was made, and that instead of a fluid there was simply an unexpanded lung and thick false membranes on the pleura, causing as much dulness on percussion and absence of respiration as a fluid would have done. The differential diagnosis of the two was not, at first, quite so easy as it is now. Inspection usually is the test between the two conditions; the intercostals being distinct, and depressed when a membrane exists; but very indistinct and level with the ribs, or, possibly prominent, when a fluid occupies the chest.

Once an immense tumour occupied and uniformly distended one pleural cavity, and in its course presented all the phenomena, natural and physical, of simple pleurisy. I tapped three times, viz.: at the back, side, and front, at the same visit. No evil followed.

A member of this society asked me my experience as to the good results or otherwise in operations on the right side; observing, at the same time, that one European writer (Trousseau?) contended that pleurisy of the right side is often or always tuberculous. I could not answer definitely, although my impressions were against the truth of the assertion. On referring to the brief summaries, and not to the original notes of my cases, where I find the sides named in 25 cases, I find that in these the operation was performed with the following results:—

	Pleurisy of	
	Right side.	Left side.
Death	4 times.	5 times.
Cure entire, without symptoms of phthisis, except in one, but pleurisy was cured in that	9 "	4 "
Doubtful result	1 "	2 "
	14	11

These data do not exactly answer the question proposed; but if tubercles always or more frequently exist in pleurisy of the right side, we should, *à priori*, anticipate more unfortunate terminations of the operation of paracentesis of the right than of the left side. My experience proves exactly the reverse, and may be expressed, if deduced from the above table, as follows:—

Of 25 cases, 14 were of the right side, 11 of the left. Of the 14 of the right side, only one person is mentioned as having tubercles, and in that the pleurisy was cured and the pulmonary symptoms mitigated.

Of the 14 persons tapped in right side 28.57 per cent. died; 64.28 per cent. were cured, and 7.14 per cent. remained doubtful. Whereas, of the

11 cases of the left side, 45.45 per cent. died, 36.36 got well, 18.18 were doubtful.

In other words, twice as many have got well from tapping the right as the left; and only half as many have had doubtful results from operations on the right, as in those where the left side has been tapped.

Hereafter, if my cases are any criterion wherefrom to judge, I shall regard an operation on the right side as much more favourable than one on the left; which I can hardly think would be the case were all right side pleurisies tuberculous.

When shall we operate?—Experience teaches me to operate in every case, however recent or chronic may be the attack, provided there is permanent or occasional dyspnœa of a severe character, evidently due to the fluid. I have, of course, more hope of doing good where the disease has not been of too long duration; is uncomplicated with phthisis, or any other disease, and where, moreover, the amount of fluid seems directly the cause of the trouble. I also deem it best to operate in *any*, even latent cases, where the pleural cavity gets full of fluid; and if, after a reasonable amount of treatment, the fluid does not diminish.

Where shall we operate?—The point originally chosen by Dr. Wyman and myself, viz.: in a line let fall from the lower angle of the scapula, and between the 9th and 10th ribs, I deem the most appropriate point at which to make a puncture. I have, however, tapped under the axilla, or in the breast, where the case seemed to require it. In selecting the precise intercostal space, on the back, I usually choose one about an inch and a half higher than the line, on a level with the lowest point at which respiratory murmur can be heard in the healthy lung of the other pleural cavity.

I never wait until *pointing* commences; for then I am sure that pus will be found. If *pointing* without opening has commenced, I do not necessarily tap in that place, as recommended by the older surgeons, but seek the most depending point in the chest. While thus desiring to operate before a *local* distension shows itself, I dislike or refuse to tap where there is contraction of the intercostal muscles; and I am certain of getting fluid only where there is distension or flattening of the same.

Objections to the operation.—One word on the objections to the operation: "We may puncture the lung." "We may let air into the pleura." "We may by our strong suction injure the lung." "The instrument often fails to operate." "The connecting tube between the pump and the trocar collapses, and thus checks the flow of liquid." "The liquid may be too thick, and cannot be drawn through the small canula." "We may excite inflammation of the pleura." "The operation is useless, because non-tubercular cases will get well without; tubercular will die in spite of it," &c. &c.

One and all of these objections are to me, with the experience I have had, simply absurd. Let any man have good instruments and manage them skilfully on proper cases, and he will agree to the truth of what I state.

The operation, like everything else in all the departments of human life, is imperfect. It cannot cure all. But it has relieved many, and will continue to do so, if surgeons will use it; it has been the prominent cause of relief in many more, and will be so hereafter, if men will theorize less and act more. It has been the sole means of saving life, I am sure, in a few of my cases; and I know some patients have died within the last few years, in New England, as I believe, for want of it, under the care of others.

It is certainly innocuous, and gives so little pain, compared with the relief that it affords, that patients have begged for it to be repeated again and again, as a mere matter of relief. In my opinion it ought never again to be allowed to fall into disuse by the profession. I regard any man who allows a patient to die of dyspnœa from pleuritic effusion, however great may be the complications with other diseases of head, chest, or abdomen, as in the dilemma of him who is either wilfully neglectful of some of the means of relief or cure, now by experience proved to be always at hand, or ignorant of the simple and beautiful operation suggested by Dr. Wyman. To a certain extent I deem my connection with the operation somewhat providential. I had seen, in the earlier years of my practice, men die with sudden dyspnœa, or, after months of obscure disease, die with one pleural cavity filled with serum, and not a particle of other disease; and, finally, I have seen tubercular phthisis follow, after months of debility, from what was simple pleurisy at first.

Having no surgical tastes myself, shrinking from the simplest operations, and doing nothing of the kind save when compelled to do so, I at times urged surgeons to operate. They declined, and men died. Finally, in cases where I had control, I took the responsibility, and asked the surgeons to do the manual they were more accustomed to than I was. Their plan was incision and dissection down to the pleura, and a suppurating wound as a consequence, a long, painful operation. At last Dr. Wyman's instrument and method came to my notice. I seized upon them as those I had long sought for. As Dr. Wyman and I were the only believers in the operation, it devolved often upon me. The result is the experience which I have given above. And now, as I have often said, I would as readily puncture the chest as I would draw a tooth, or vaccinate a child.

BOSTON, Nov. 1862.

ART. II.—*Conservative Medicine as Applied to Therapeutics.* By AUSTIN FLINT, M. D., Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, and in the Long Island College Hospital.

AN explanation of the term *Conservative Medicine* may be required for many of the readers of this journal. The term should be at once explained, because the reader may suspect a meaning quite different from the sense in which it is to be here employed. It is not intended by this term to refer to a conservatism which adheres to principles and rules of practice on account of antiquity, authority, or usage. The conservatism meant is not an adherence to doctrines which have been or are now held. It is not that kind of conservatism which protests against any changes, and resists all innovations. The definition of the term will be found to involve a signification quite the reverse of all this.

In an essay written for another journal,[1] the writer has adopted this term as an analogue of the term *Conservative Surgery.* The conservative surgeon, before resorting to capital operations, carefully considers the situation of patients, and the danger to life which the operations involve; and he regards the preservation of the integrity of the body as a higher success than the most skilful mutilation. In like manner, the conservative physician considers fully the effects of the potent agencies employed as remedies, appreciating the fact that, if not remedial, these agencies are necessarily injurious, and may prove destructive; and in the management of diseases he always accords due importance to the preservation of the powers of life. As the true surgeon is not the mere operator, unmindful of the duty of preserving and restoring parts, who uses the knife without regarding the condition of the patient; so the true physician is not the routine practitioner, prescribing, with an unsparing hand, active therapeutical measures without any clear apprehension of the objects to be fulfilled, making no allowance for the natural tendency of diseases toward recovery, and disregarding the state of the system.

In the former essay, the writer attempted to show that the grand improvements in practical medicine which have been steadily going on for the last quarter of a century, are characterized by conservatism as just defined. This conservatism is shown by a greater discrimination in the use of spoliative, perturbatory, and debilitating measures, such as bloodletting,

[1] North American Medico-Chirurgical Review; the concluding No., viz.: for Nov. 1861 (republished in the American Medical Monthly, No. for July, 1862). In the present essay the writer has endeavoured to develop the subject more fully, to present additional considerations, and to treat of the subject under different points of view.

mercurialization, emetics, cathartics, and severe counter-irritation. It is shown by an increased use of remedies which are potent without damaging the organism, such as opium and other sedatives. It is shown by a reluctance to interfere actively with the course of diseases which have a self-limited career. It is shown by a greater reliance on hygienic measures. It is shown by more attention to alimentation, and by the earlier and more efficient employment of supporting treatment in all affections which tend to destroy life by asthenia. The term *conservative medicine*, thus, expresses the great characteristic of medical practice at the present moment; and it is so, not from the authority of any master mind, or the influence of any dominant theory, but purely because it is incidental to the advancement of our knowledge of pathological conditions, of the action of remedies, and of the natural history of diseases. And the term may also be considered as expressing a great principle which, to a certain extent, should govern the views and conduct of the physician. Regarding it in the latter point of view, I shall present in this essay some considerations connected with the application of the principle of conservatism to therapeutics.

Medicus Naturæ minister non magister est. It is interesting to note the principle of conservatism as manifested by nature in the history of diseases. Waiving all questions concerning the existence and sources of morbid conditions, we see exemplifications of conservatism on every side in pathological laws, and this principle becomes more and more conspicuous in proportion as we advance in our knowledge of the natural history of diseases. The well established fact with regard to many diseases, that they tend intrinsically to recovery, and not to death, as formerly supposed, shows the conservatism of nature. The recovery, sometimes even without medication, from diseases which are generally destructive, exemplifies the principle. This is certainly true of pulmonary tuberculosis. The principle is exemplified in the situation of the great majority of local affections which are not traumatic, and therefore said to be spontaneous; the parts oftenest affected being not so closely connected with functions necessary to life as the parts which generally escape. Thus, the great majority of acute inflammations are seated in the skin, mucous structures, and certain of the serous membranes. On the other hand, internal organs, the functional exercise of which is more immediately concerned in vital operations, such as the stomach, small intestines, pancreas, liver, kidneys, are comparatively not often acutely inflamed. The principle is seen in the spontaneous removal of morbid products from different parts of the body, and in the disposal, by elimination or otherwise, of the *materies morbi* which there is reason to believe give rise to a host of local affections.

The study of the events belonging to the natural progress of individual diseases discloses abundant illustrations of the principle of conservatism. The limitation of inflammation to a particular structure furnishes striking examples. For instance, how rare is it that the inflammation in tonsillitis

or pharyngitis extends into the larynx! Were it not for this conservative provision, how serious would be these frequent affections of the throat in view of the liability of extensions to the windpipe, and the danger attendant on this complication! Again, what a vast difference is there, in severity of symptoms and danger to life, between ordinary and capillary bronchitis; and how rare the latter, notwithstanding the frequency of the former! We can only explain this fact by stating that the inflammation extends from the larger to the smaller bronchial tubes only as an exception to a law of the disease. The physician, by attempting to place himself in the false position of the master of nature, may thwart her conservative provisions much to the detriment of his patients. A striking illustration of this fact is afforded by the practice heretofore inculcated in cases of hypertrophy of the heart. We have been taught to pursue active measures, and, by some, measures of a very severe character, with a view to prevent and diminish hypertrophy of the heart. Now, it is plain that this form of enlargement is a most important conservative provision of nature to obviate evils which would otherwise arise from the valvular lesions which precede the development of cardiac hypertrophy in the vast majority of cases. The physician is the servant of nature when he does not interfere with, if, indeed, he do not endeavour to foster, this abnormal condition.

A splendid theme for an essay would be *the principle of conservatism as exemplified in the natural history of diseases.* I must here content myself with this brief reference to it.

Directing attention to *conservative medicine as applied to therapeutics*, the subject naturally presents itself in a twofold aspect, viz.: *First*, as regards the therapeutical indications derived from our knowledge of the pathological character, condition, etc., of diseases; and, *Second*, as regards the general object of remedial measures. I shall consider the subject under these two heads; but, before entering upon them, there are certain considerations which are suggested by the inquiry, What are some of the general characteristics of conservative medicine? Or, to vary the question, What are the more prominent of the traits which distinguish the conservative physician? In answer to this question, I shall offer a series of aphorisms which will lead the way to subsequent inquiries relating to therapeutical indications and objects.

1. The conservative physician endeavours to protect the system, on the one hand, against disease; and, on the other hand, against injurious medication. He therefore employs potent therapeutical measures only with a view to well defined objects which are in accordance with clear indications. He is not represented by the allegory of the blind man with the club; he never strikes at random, but always with a purpose and aim. He regards active remedial agencies as, in themselves, evils which become blessings when they aid in the escape from other and greater evils. To

quote the language which some one has used, "he is content with doing nothing when ignorant how to do good."

2. The conservative physician does not undertake to control diseases which, with our existing knowledge, are uncontrollable. And if he employ measures for that end tentatively, he is governed by this rule, viz., not to subject the patient to measures which, if they do not prove successful, will diminish materially the chances of his passing through the disease with safety.

3. In the management of all the diseases which our existing knowledge does not enable him to control, the conservative physician always pursues the *expectant* practice, using this term in its proper sense, viz., as denoting not necessarily the attitude of a passive spectator of the progress of disease, but the adaptation of therapeutical measures to circumstances as they arise. In this sense, expectation expresses the proper conduct of the practitioner whenever he is not warranted in resorting to treatment with a view to arresting the progress of disease or abridging its duration.

4. The practice of the conservative physician has reference always, not alone to the disease, but to the condition of the patient. In the language of Chomel, he does not treat diseases, but he treats patients affected with diseases. A formularied, routine method of treatment for any disease is, therefore, with him impossible. In different cases of the same disease his therapeutical measures may be quite different, and even directly opposite in their character and effects. Of two persons attacked with a disease, for instance pneumonia, one may seem to him to claim measures which are commonly known as antiphlogistic, while the other may appear to require tonics and stimulants.

5. The conservative physician directs his attention with special care to the vital powers. He is always ready to support these wherever he sees evidence of their failure, without regard to the name or the stage of the disease. He does not wait for the last flickerings of the lamp of life before resorting to sustaining measures; he endeavours to prevent the flame from falling to so low an ebb, and with sagacious foresight he would forestall the occurrence of failure, resorting to sustaining measures even when not imperatively required, rather than run much risk of deferring them when they might be useful. A full appreciation of the importance of supporting the powers of life (using this metaphorical expression in its common, well understood, practical sense) is, *par excellence*, a trait of conservative medicine.

6. The conservative physician is by no means a timid practitioner. He carries a lancet, and is ready to use it under certain circumstances, although, it must be confessed, the instrument is apt to become rusty from non-use. He does not repudiate any of the potent measures embraced in the materia medica, but he seeks to employ them with a nice discrimination. He is bold in the use of certain remedies which are used with timidity by many

practitioners to whom the term conservative is not applicable, viz., such remedies as quinia, opium, and alcoholics. His boldness, however, is quite as much displayed by resolutely forbearing to resort to potent measures whenever active interference does not seem to him to be called for, as it is by the employment of powerful therapeutical agencies.

7. Recognizing the fact that medicine should be progressive; that new developments in physiology and pathology, together with the accumulating fruits of experience, should lead to constant improvement in the *ars medendi*, the conservative physician repudiates all dogmas or systems of practice, whether without or within the pale of the profession, which shackle the mind and stand in the way of progress. In medical faith he is independent of creeds and discipleship. He occupies a middle ground with regard to the extremes of the present day as represented by old fogyism and young physic.

8. The most distinguishing characters of conservative medicine, in a few words, are as follows: Recognizing as a fundamental principle of therapeutics that potent remedies are never neutral, but must do either good or harm in proportion to their potency, it aims to abstain from active measures if uncalled for or of doubtful utility, and it strives to assist the powers of life, by means of remedial and hygienic influences, in enduring and triumphing over disease.

This enumeration of some of the prominent traits of conservative medicine might be extended, and each might serve as a text for a distinct essay. But I proceed to consider the subject under the first head, viz., "as regards the therapeutical indications derived from our knowledge of the pathological character, causation, etc., of diseases." And it will serve our present purpose to arrange diseases into the following classes: Inflammatory affections, the essential fevers, degenerations of structure, functional disorders, and a residual class to which we may apply the term diathetic. The subject covers so wide a field that it is hardly necessary to disclaim the attempt to consider it fully within the limits of a few pages. The considerations presented in this essay must needs be fragmentary and discursive, the object being merely to suggest trains of reflection.

Inflammations form the larger share of the affections with which the physician, as well as the surgeon, has to deal. The morbid processes embraced under the name of inflammation have accordingly been studied with great interest; and with what success? The series of phenomena which make up the history of inflammation have been unfolded from the first appreciable event, viz., the determination of blood to, and its detention in, the inflamed part, to the various terminations of the inflammatory processes. But the essential pathology underlies that first appreciable event. What is it which occasions the attraction of blood to, and its detention in, an inflamed part? The causation involves a knowledge of inappreciable con-

ditions antecedent to the development of the phenomena of inflammation. Reference is here had, of course, to inflammations which are not traumatic. It is as certain that some unknown causative influence exists and acts in, as yet, some unknown manner, to give rise to an inflammation when it is said to be spontaneous, as it is that the local injury produces the inflammation when traumatic. If this be a fair statement of our knowledge of the essential pathology and causation of inflammation, what rational conclusion may be drawn therefrom respecting therapeutics? Ought we to expect to be able to suppress an inflammation by diminishing the quantity of blood in the body; or by trying to direct blood elsewhere; or by the production of an inflammation in another part; or by evacuating the stomach and bowels; or by exciting some violent commotion in the system under a vague notion that the local affection may be shaken off? Are the pathological and causative conditions seated in the blood or in the nervous system, or in both? This question we may hope to answer when the physiologist has explained more fully the mysteries of the capillary circulation and of nutrition. Until then, we can hardly expect to find rational indications for arresting inflammation. Our knowledge of the means for this end must be empirical; and experience has not yet led to the discovery.

Let it not be said that medicine is disparaged by this view of the resources of our art. A conservative practice can do vastly more than simply not do harm by vainly attempting, with the measures just named, to extinguish inflammations. It can do much for the safety of the parts inflamed by measures to palliate local symptoms, to promote favorable modes of termination, to obviate incidental evils, to aid in the removal of morbid products, etc. Conservatism dictates measures for those ends, embracing surgical as well as medical interference, as, for example, when paracentesis is resorted to in pleurisy. Conservative practice can do a vast deal by measures addressed to the system. To obviate the general disturbance occasioned by inflammations, or, in other words, to render the system more tolerant of their existence, by means of opium and other anodyne remedies; to support the vital powers by means of tonics, alcoholics, and nutriment—these are indications which have reference to the safety of the patient, and a speedy triumph over the disease. In fulfilling these indications the conservative physician is often called upon to act boldly, resolutely, and perseveringly.

It is to be considered that, exclusive of certain acute inflammations which may destroy life by obstructing the exercise of vital functions, as pericarditis by the pressure of liquid effusion, laryngitis and capillary bronchitis, by preventing the passage of air to and from the pulmonary vesicles, etc., death is generally caused, not by an irremediable injury to the inflamed part, but by the general disorder and failure of the vital powers. Acute peritonitis, for example, is a dangerous disease, not on account of the damage done to the peritoneum or the abdominal viscera, but because the

powers of life do not hold out a sufficient time for recovery. Patients may die with this, as with other inflammatory affections, for the simple reason that they do not live long enough for the restorative processes to take place. Is it not, then, an indication not less in accordance with conservatism than with common sense, to endeavour to obviate the general disorder, prevent failure of the vital powers, and prolong life sufficiently for restoration?

Acute peritonitis has just been cited. How striking an example does this disease afford of an immense improvement due to bold conservative practice! How fatal was this disease under the treatment until recently in vogue, and for which, alas! the practitioner still finds authority in some standard works! Who that has had an opportunity of contrasting the past and present methods of treatment, can doubt that the former want of success was measurably due to over depletion and cathartics? The comparative success of the present treatment, doubtless, is by no means wholly due to the abandonment of these measures. The free use of opium, and of alcoholics when indicated, has contributed, in no small measure, to this success. This is a reasonable opinion, although here, as with respect to other diseases which have rarely been observed under circumstances in which no medical treatment was employed, it is not easy to determine how much a more successful treatment may depend simply on the displacement of injurious measures.

Directing attention to chronic inflammations, to what is their chronicity attributable? Sometimes to an obvious, persisting cause of irritation; sometimes to a palpable, associated morbid condition, as when bronchitis is kept up by pulmonary congestion due to cardiac lesions; sometimes to lesions which, from the situation of the part affected, are restored with difficulty, as in cases of chronic dysentery. In other instances it is attributable to an inappreciable condition which, for the sake of distinction, it is customary to call a constitutional cause. Who has not seen chronic venereal ulcers of long standing heal under the use of mercury; or periostitis, from which the patient may have suffered for many months, rapidly disappear under the use of the iodide of potassium? Now, there is reason to believe that certain chronic inflammations are not less dependent on a constitutional causation, although the cause may not be of a specific character like that in syphilis. This is by no means a new idea. It was the leading idea in the teachings of Abernethy, and, as the basis of the so-called *alterative* treatment, of which mercury was considered as the chief, it has led to not a little injurious medication. In fact, a signal instance of conservatism is the infrequent induction of mercurialization in the treatment of chronic inflammations, at the present time, as contrasted with the frequent resort to this measure but a few years ago. On the other hand, the existence of a constitutional causative condition in certain inflammations is often not sufficiently considered by practitioners, and hence an over-

reliance on topical measures of treatment which are not only inefficacious, but not infrequently contribute to perpetuate the affection.

As an illustration of the fact just stated, I will select an affection which of late years has attracted a good deal of attention, both professional and popular, viz., chronic pharyngitis. Exclusive of cases of syphilis, this affection is very common, especially among persons of the male sex engaged in pursuits which overtask the nervous system and involve sedentary habits. For several years past this affection has been treated very generally by means of topical, cauterizing applications, usually the nitrate of silver, repeated at intervals for a greater or less period. Has this treatment proved successful? For one, after considerable experience, I am prepared to answer this question in the negative, and this I find to be a conclusion drawn by many from the results of experimental observation. The treatment, I am persuaded, is not only rarely beneficial, but often aggravates the affection. The affection is the local expression of a constitutional state, and will prove rebellious to treatment so long as the latter continues. General measures, in which hygiene plays an important part, effects the cure. I shall content myself with this illustration, although others might be added. Suffice it to say that the same conclusions, I am persuaded, may be drawn with respect to severe topical treatment in diphtheria, and in chronic inflammations seated in other accessible situations, for example, ophthalmias, erysipelas, and certain of the affections of the cervix uteri.

Conservatism dictates an appreciation of the dependence of local affections on a morbid constitutional state, although our present knowledge may not enable us to understand the primary and essential deviations from health which constitute this state. Conservatism sanctions the trial of remedies, under proper restrictions, with a view to the removal of this state. Conservatism is ready to accept remedies for that end, the efficacy of which has been empirically established, without requiring an explanation of their *modus operandi*. The chlorate of potassa, in certain affections of the mucous membranes, would appear to be a remedy of this description. We may hope that additional remedies of this kind may, from time to time, be discovered. In the mean while, conservatism enjoins, not only an acquaintance with the resources of our art, but a just appreciation of the limitations incident to the present state of knowledge; and hence, with reference to the affections under consideration, conservatism tries to avoid being led into injurious medication by such loose expressions as "substitution of healthy for diseased action," and "alterative treatment," expressions which have served as a warrant for not a little mischievous practice.

Finally, conservatism recognizes as a general indication in chronic inflammations, to place and maintain the body in the best possible condition, by means of tonic remedies, adequate alimentation, and the hygienic influences which conduce to that end. It is consistent alike with experience and good sense, that, other things being equal, the nearer the normal standard the

condition commonly known as the general health, the better the prospect of recovery from chronic inflammation, and the better fortified is the system to endure its continuance.

Passing to the essential fevers, we know that each of them has its own conservative, morbific agent, that is, a special cause which will produce one particular species of fever, and that species only. The special cause of variola, for example, will never give rise to rubeola or scarlatina. The special cause known as marsh miasm will not give rise to typhoid or typhus fever. Each of the two last named species of fever has its own special cause which will not give rise to the other species. These statements are based on logical inferences from certain facts, not on the demonstrative proof afforded by an analysis and comparison of the different agents which constitute the poisons producing these diseases. Our belief in the existence of these poisons is not derived from our knowledge of their nature. What are their chemical and physical characters we know not. We know that an exceedingly small and even an inappreciable amount suffices to produce fever, as when certain of these fevers are produced by inoculation and by contagion; and analogical reasoning leads us to the conclusion that they act as ferments, or on the very imperfectly understood principle of catalysis. Hence, we say these diseases belong to a class distinguished as zymotic. And if they act on the principle of catalysis, their primary action must be in the blood. We, therefore, accept the humoral pathology of fever. The demonstrative part of this pathology is confessedly wanting, but it may be considered logically established.

Now, the aim of conservative medicine being to afford protection against disease, on the one hand, and, on the other hand, against needless and therefore injurious medication, the first inquiry is, Do the present resources of our art enable us to control these diseases? As regards the purely periodical fevers, this question may be answered affirmatively. We can control these by means of certain special or specific remedies of which quinia is the most efficient. These remedies, for the time being, either neutralize the poison, or, in some way, suspend its morbific action. Conservatism thus manifests its power to protect against disease by its ability to arrest these fevers. And it has also manifested its protection against needless medication by doing away with certain preparatory and adjunctive measures which, until recently, were deemed important, experience having abundantly shown their inutility. In fact, the doing away with bleeding, emetics, cathartics, and mercurialization, in the treatment of intermitting and remitting fever, is a striking illustration of conservatism. It is but a few years ago that these measures were in vogue; it was then thought to be injudicious to enter upon the special remedy at once; this remedy was given timidly in small doses only, never except in the apyrexial period, and not if the fever were complicated with local inflammation. In each of these

particulars, the treatment has changed, and the change constitutes one of the most important of the late improvements in practical medicine.[1]

Protection against the eruptive and continued fevers, like that afforded by quinia and other anti-periodic remedies against the periodical fevers, is reserved for the future. We cannot control the former as we can the latter. Yet, with regard to the most formidable of all, in smallpox, the glorious discovery of the immortal Jenner, by way of prevention and modification of its severity, affords a protection almost complete, and has deprived the disease of nearly all its terrors. The contagiousness of the eruptive and continued fevers, and the fact that they have a definite, self-limited career, may seem to discourage an expectation that means of controlling them will ever be discovered; but how little ground was there to anticipate the fact that the virus of variola, as modified by its production in the body of the cow, would give rise to an affection insignificant except in regard of its power of protecting against the virus received from our own species? How many would have anticipated the wonderful modification of smallpox produced by inoculation! It is not unreasonable to hope that other Jenners will hereafter arise, although Providence may have ordained their appearance at remote epochs. Meanwhile, it is a legitimate object of experimental research to discover means of preventing, arresting, and modifying the eruptive and continued fevers. There is ground for the belief that certain measures, which have been already tried, are occasionally successful in suspending and shortening typhus and typhoid fever. This remark has reference to large doses of opium, and the wet sheet. But in experiments for these ends the rule of conservatism already mentioned is to be observed, viz: not to make trial of measures which, if they do not succeed, will be likely to prove in themselves dangerous. The conservatism of present practice is strikingly shown by the relinquishment of potent measures to break up the continued fevers, viz., bleeding, emetics, cathartics, and mercurialization, the inefficacy of which experience has abundantly established.

The present prevailing views of the management of the eruptive and

[1] The January No. of this Journal, in 1841, contains an article, by the author of this essay, on the management of intermitting fever. In that article the following points were set forth: The safety and propriety of giving quinia in large doses, *i. e.*, from ten to twenty grains; the inutility of preparatory treatment, and of the use of emetics, cathartics, etc., during the progress of the disease; the diminished liability to relapses in proportion as the paroxysms are promptly interrupted, and, in cases in which inflammatory complications exist, the importance of giving the special remedy in doses sufficient to arrest at once the paroxysms. Those views were then at variance with the prevailing modes of practice. The writer is very far from assuming to have exerted much agency in producing the change in practice; but he trusts he may be excused for stating that the article referred to advocated, in all respects, the change which has actually taken place.

continued fevers, irrespective of measures to arrest them, or abridge their duration, are eminently on the side of that conservatism which protects the system against needless medication. Practitioners now rarely subject patients to loss of blood in order to abate the intensity of febrile excitement and prevent the development of local congestions or inflammations; they do not produce local complications by blisters and other means of counter-irritation; they do not subject the system to the perturbation of cathartics to change the condition of the stomach and remove saburral matters; they do not give cathartic remedies to cleanse the bowels, increase the flow of bile, or improve the secretions; they do not resort to powerful measures to produce perspirations which they hope may prove critical; they do not attempt to salivate under the vague notion of producing an alterative effect. These anti-conservative measures belong to the past, and the physician is now satisfied, if he cannot arrest or abridge these diseases, to pursue an expectant course; he watches symptoms, and meets indications as they arise in individual cases. He may see nothing which calls for medication during the progress of the disease. Hygienic conditions receive his special attention, the importance of these having come to be more and more appreciated in proportion as remedial agencies have been used with greater discrimination. Palliation of symptoms and supporting measures often constitute the sum and substance of his treatment. The latter, if occasion require, he employs boldly and perseveringly. In certain cases, when his great object is "to obviate the tendency to death," he supports his patient as he would hold up a drowning man, until, by vigorous exertions, at length the shore is reached.

No branch of the science of medicine has excited greater interest, of late years, than the study of structural changes. Here the application of the microscope has been of inestimable service, by unfolding, first, the minute structure of organs in health, and, second, the alterations due to disease. How much light has been shed on our knowledge of the various lesions of different organs—the brain, liver, kidneys, heart, etc.! And much more information is to be expected from continued microscopical researches. But, complete as our knowledge of appreciable changes of structure may become, this knowledge is but the scaffolding raising us higher and higher toward the primary conditions of disease; and these are still beyond us when we have reached the highest point of elevation. In other words, structural changes are the effects of prior morbid actions, and the latter must be understood before we can comprehend fully the essential character of diseases. I am far from wishing by this statement to depreciate the results of microscopical researches. It is easy to cite illustrations of their great practical value. Thus, our knowledge of the changes which the cerebral arteries undergo from the deposit of fatty granules, enables us to explain the occurrence of apoplexy; our knowledge of the fatty degenera-

tion of the muscular fibres of the heart, affords an explanation of the weakness of that organ in certain cases and the occasional rupture of its walls; the presence of newly developed fibrous tissue in the interlobular spaces of the liver in cirrhosis, renders the occurrence of ascites intelligible; the loss of the secretory cells of the convoluted tubes of the kidneys in certain affections of the kidneys, accounts for the production of uræmia—and numerous additional examples might be cited to show how important in their bearings on practical medicine are the developments for which we are indebted to the microscope. Still, morbid anatomy, in its widest scope, is only but a province of the natural history of diseases. It describes appearances; it traces the different steps of morbid alterations, and strives to ascertain their points of departure—and this is vastly important; but the prime source of the lesions which it studies underlies and precedes the earliest of the changes which the senses can discover. Take, for example, Bright's disease, and admit the researches of Dr. George Johnson and others to have established that the structural changes incidental to this disease have their point of departure in the secretory cells of the kidneys, and that the various morbid changes of the organs are fully explained by the loss of cells, the presence of fatty and other deposits, etc., we do not reach the *fons et origo* of the disease. The morbid conditions on which hangs the first link of the chain of appreciable alterations, is inappreciable and, as yet, unknown.

Commensurate with our progress in the knowledge of structural changes, has been improvement in the means of determining their existence during life. We have learned to investigate certain vital organs with wonderful accuracy. The examination of the urine, chemically and microscopically, reveals morbid conditions of the kidneys; auscultation, together with the other methods of physical examination of the chest, discloses the lesions to which the lungs and heart are liable. Means of interrogating, in like manner, the liver and other of the abdominal viscera, will, in all probability, be found when the preceding changes and their pathological relations have been more fully studied. But it is to be considered that the diagnostician deals with symptoms and signs representing existing changes which have made more or less progress. He determines mischief already done. He has not often the opportunity, and, if he had, he is rarely able to foresee the occurrence of internal lesions. Every clinical observer knows that affections involving irremediable lesions are developed imperceptibly, and are already developed when cases first come under the cognizance of the physician. This is true of Bright's disease, cirrhosis of the liver, pulmonary tuberculosis, carcinoma in various situations, organic disease of heart, etc. Immensely important as it is to determine the existence of lesions and the amount of damage which they have occasioned, it would be of immense advantage to be able to go still farther and ascertain the existence of those

morbid actions which precede and determine the development of structural changes.

Not to dwell too long on these considerations, let us inquire into their general bearings on therapeutical indications. What are the dictates of conservatism in view of the foregoing facts? Suppose an important organ to be the seat of some structural change, and, so far as the organ is already damaged by the change, the affection to be irremediable. Nature, to a certain extent, has provided for such a state of things, by furnishing a surplus amount of structure in important organs. The lungs are so far beyond the actual wants of the economy, that a loss equivalent to the functional capability of one whole lung is not incompatible with robust health. The two kidneys exceed by at least the function of one of these organs, the necessities of the system. The heart may be considerably impaired, and still be sufficient for the circulation; and so with the liver, and, doubtless, the glandular organs contained in the stomach and intestines. *Medicus naturæ minister est.* The physician should endeavour to aid nature in doing as well as possible under the damage which the affected organ has sustained. How is this object to be attained? In general terms, by preventing, if possible, any farther progress of the structural change, and placing the organism in the best possible condition compatible with the existence of the lesion.

We may lay it down as a rule of general application, that an organic affection is less liable to progress, the functions of the affected organ suffer less, the system is less disturbed, and the local mischief is borne for a longer period, in proportion as, in all other respects, the body approximates to a state of health. Striking results are often obtained in cases of an incurable malady, by effecting an improvement in the state of the system. For example, it has occurred to me repeatedly to see patients enter hospitals with Bright's disease accompanied with such an amount of dropsy, prostration, etc., that the prospect of improvement seemed most unfavourable; but, after a time, the dropsy has disappeared, the strength has improved, and the patients have left the hospital feeling able to return to labour. I do not now refer to cases of acute albuminuria, which may pursue this course and end in recovery, but to chronic cases of an incurable affection of the kidney. The lesion continues in the cases referred to, the urine remains albuminous, and, sooner or later, grave consequences are developed. Whence the marked improvement and apparent recovery? Simply because the system has been improved by rest, by nutritious food, by tonic remedies, and, probably, by an interruption of habits which have contributed greatly to the production of the local affection. Similar examples might be cited of patients with other affections, such as cirrhosis of the liver, cardiac lesions, and pulmonary tuberculosis. Structural changes generally commence and increase to a certain extent without giving any obvious manifestations of their existence; the system tolerates them, provided it has

nothing else to bear. But when other circumstances occur to disturb or weaken the economy, an affection, up to this time latent, declares itself. If now the practitioner impute everything to the local affection, he will be much in error. Let him succeed in restoring the system to the state in which it was prior to the manifestations of the affection, and the latter may again become comparatively innocuous.

A striking illustration of the influence of associated circumstances in exaggerating the effects of a local affection is sometimes afforded by the coexistence of anæmia and cardiac lesions. A patient with this combination of affections may present palpitation, dyspnœa, and general dropsy, so that a fatal termination may seem to be near at hand. But, by removing the anæmic state, the effects of the disease of heart disappear, and the patient appears to recover so fully that, were it not for the testimony of physical signs, the existence of the cardiac lesions would not be suspected. Examples of this kind have repeatedly fallen under my observation. Other examples and considerations might be adduced to show how much conservatism can sometimes accomplish by enabling the system to bear up under local affections, the continuance of which is inevitable: but I must hasten to another division of the subject.

Disorders occurring independently either of inflammation or appreciable lesions, and, therefore, distinguished as functional, differ as regards their pathological import. A correct interpretation is necessary to a full understanding of rational indications. Vomiting and purging, for example, in the course of Bright's disease, have a special meaning which the researches of Bernard and others have enabled us to understand. They show, in that connection, the conservatism of Nature, the object being to eliminate vicariously the urea which accumulates in the blood in consequence of its deficient excretion by the kidneys. The conservative physician thus follows the guidance of nature when he endeavours to relieve the system of this excrementitious principle by remedies which act upon the gastro-intestinal mucous membrane; and he would violate conservatism were he to attempt to arrest these symptoms of disorder of the digestive organs. In most instances, however, disorders of functions either have not so definite a significance as this, or our present knowledge does not enable us to interpret them fully; and hence the practitioner must derive his indications from certain general principles.

Functional disorders involve, for the most part, morbid conditions of the nervous system. And these, when not produced directly by over-exercise or over-excitation, generally involve a prior abnormal state of the blood. This is a capital fact as regards therapeutical indications. The nervous system, as a generator of force, is powerless, and all its vital functions are speedily lost, without the presence of oxygenated blood. How quickly are the power of willing, the faculty of feeling, and consciousness suspended

by the deficient supply of blood to the brain in syncope! The blood is the medium, on which the nervous system is as dependent for the capacity to perform its functions, as the body on the atmosphere for the continuance of life. It is not strange, therefore, that deviations from the normal composition of the blood should occasion disturbance of the functions of the nervous system. But the effects of certain poisons upon the nervous system, when introduced into the blood in exceedingly minute quantities, are truly wonderful. A fraction of a grain of strychnia acts upon the motor nerves, leaving the mental faculties intact, and gives rise to epileptiform convulsions; a similarly minute quantity of woorara paralyzes the nerves of motion; a few inhalations of the vapour of chloroform extinguish the faculty of feeling pain; a few drops of the tincture of the veratrum viride reduces, in a notable degree, the frequency of the heart's action; an amount of atropia almost inappreciably minute suffices to paralyze the circular fibres of the iris: these are some of the well-known manifestations of an astonishing susceptibility of the nervous system to the action of certain morbific agents contained in the blood in exceedingly small quantities. The facts just stated (of which it is only necessary to remind the reader) are valuable as shedding light on the interpretation of various functional disorders.

An impoverished state of the blood stands in a causative relation to various functional disorders. Clinical experience teaches that most of the neuroses, together with various disorders, such as palpitation, dyspepsia, constipation, etc., are often associated with anæmia, and disappear when the blood is restored to its normal condition. It is a general principle, then, in the management of functional disorders, to direct attention to the state of the blood. And here I am led to remark, in passing, that the improvements in practice based on the knowledge and appreciation of anæmia, acquired within the last few years, furnish one of the most striking of the illustrations of conservative medicine. Before this condition of the blood was understood, the affections dependent thereon were, of course, not correctly interpreted, and their treatment was inefficacious if not injurious. And the non-recognition of this condition as coincident with a host of affections, involved a want of discrimination in the employment of the antiphlogistic measures, which was the source of not a little unsuccess and injury. The anæmic state is a very important source of indications in the treatment of functional disorders; but there are doubtless other morbid conditions of the blood of which our present knowledge affords less precise information. Various functional disorders, as well as inflammations and structural changes, are probably due to toxæmic conditions which remain to be ascertained. Unknown poisons, received from without and generated within the body, may be the source of diverse affections, the origin of which we are now unable to explain. Reasoning analogically from the effects of the well-known poisons to which reference has been made, we are led to this conclusion. Moreover, we have already acquired knowledge of certain forms of toxæmia, occurring

as results of morbid actions within the organism. We know that urea accumulating in the blood acts as a poison on the nervous centres, giving rise to epileptiform convulsions and fatal coma. We know, too, that serous and other inflammations are incidental to uræmia. The researches of Garrod appear to establish that gout is due to the accumulation of uric acid in the blood; and the ingenious and striking experiments of Dr. Richardson go to show that it is lactic acid which gives rise to the articular affection and to endocarditis in acute rheumatism. May we not expect from researches in this direction developments which will shed new light on the production of other affections, and furnish important therapeutical indications? Assuming, for example, that cholesterine is an important excrementitious product produced in the brain and nerve tissue, and eliminated by the liver, it may be found that a deficient excretion of this substance is the source of a toxæmic condition which has important pathological relations; and we may find that there is a substratum of scientific truth in the vague notions of biliousness with which the professional and popular mind have been so long and strongly imbued. Cholesteræmia is one of many analogous conditions of the blood which are yet to be revealed and clinically studied.

Reasoning from the analogy between the effects of certain poisons and the phenomena of certain functional affections, it is reasonable to attribute the latter to a toxical source. For example, the phenomena of epilepsy bear so much similarity to the effects of strychnia, that the convulsions produced by this poison are said to be epileptiform; and this is true also of the convulsions incidental to uræmia. Now, taking into view the clinical history of epilepsy—convulsive paroxysms of brief duration, recurring at variable intervals, the patient often perfectly well just before and immediately after the paroxysm—how much more probable is it that a poison is generated somewhere in the body, and manifests itself by a powerful transient action on the nervous centres, than that the phenomena are due to any mere disturbance of the circulation or to slight changes in the consistence of the medulla oblongata such as are described by Von der Kolk. What a blessing would be the discovery of the nature and source of the toxæmic condition giving rise to epilepsy and the means of preventing the production of the poison!

The highest aim of conservative medicine in all affections involving toxæmia from morbid actions within the body is expressed in the foregoing sentence. It is to obviate the production of the poisons. But first of all, the sources of toxæmia must be ascertained and the conditions under which its different forms are produced. Here is a field of research from which much is to be hoped for, but from which it is needless to say little has been as yet acquired. The aims of conservatism, next in importance to the one just stated, are, knowing the nature of different poisons, together with the means of their destruction or expulsion from the body, and recognizing

their existence in the blood as early as possible, to effect either their neutralization or elimination.

I shall pass by the class of diseases which I have distinguished as diathetic with a very few words. The meaning of the term diathesis, which is used in a variable and often an indefinite sense, I would here limit to denote a special state of conformation or of the constitution, which, under requisite causative conditions, determines the occurrence of a particular form of disease; in other words, an intrinsic aptitude of the organism to the development of certain affections. This diathetic condition may be innate or acquired, and it is often inherited. In this sense scrofula, tuberculosis, asthma, rheumatism, gout, are diathetic affections. In what consists the diathetic state our existing knowledge does not enable us to say.

Conservatism would dictate the importance of removing the state if it be practicable. But it is evident this is not to be done by medication, for the existence of a diathesis is not inconsistent with health; and, moreover, we have not the means of determining with positiveness the existence of a diathesis until it has eventuated in the development of disease. That a diathetic state may be held in permanent abeyance we have every reason to believe. This is accomplished more by hygiene than by therapeutical influences, viz: by climate, habits of life, and avoidance of the causative conditions which render active a latent diathesis. This division of the subject is by no means lacking in interest and importance, but the space already occupied warns me not to enter more fully into it. Besides, the considerations which are suggested under this head relate more especially to hygiene, and the application of conservative medicine to this department of medical practice does not enter into the scope of the present essay.

So far, the subject of this essay has been considered in the first of the two aspects under which it is to be regarded, viz: "The therapeutical indications derived from our knowledge of the pathological character, causation, etc., of diseases." It remains to notice the second aspect, viz: "The general objects of remedial measures." These two divisions of the subject are correlative; therapeutical indications and therapeutical objects are, of course, mutually involved, but new considerations arise in looking at the subject from the latter point of view. I shall content myself with endeavouring to classify the objects of remedial measures, and offering a few remarks under the head of each class. The conservative physician places before himself certain general objects in dealing with diseases; what are these objects? They may be embraced in five classes:—

1. The first object is prophylaxis. Diseases may sometimes be prevented. It is not strictly appropriate to call this a therapeutical or remedial object, but in so far as medicinal agents are employed for the prevention of diseases, the object falls within the province of the therapeutist, and the incongruity is merely in the use of terms which imply that disease already

exists. Excluding preventive measures which are properly surgical, such as the cauterization of poisoned wounds, etc., known prophylactic remedies are not abundant. In fact, we are limited to a few examples. The protective efficacy of quinia against intermittent fever may be considered as sufficiently established. Alcohol appears to protect the system against certain venoms. The protective power of alcohol against tuberculous disease is a question *sub judice*, and one may well dread the settlement of the question in the affirmative. The antidotes to poisons in the stomach are preventives of the diseases which they would produce if not neutralized. In like manner, we might hope to discover antidotes to hæmic poisons, were we acquainted with their nature, and aware of their existence prior to the production of the affections to which they give rise. Doubtless by judicious management secondary affections may sometimes be prevented. Thus, by favouring the elimination of urea, in uræmia, either through the kidneys or the alimentary canal, we may prevent, for a time at least, inflammations, convulsions, and fatal coma; and by restraining the excretion of albumen with the urine, we may prevent the occurrence of dropsy. Other instances of this kind of prophylaxis might be cited; but it is evident that what we may accomplish is, for the most part, only a matter of reasonable conjecture, and could not be established by positive proof. It is a curious fact that certain affections appear to be prophylactic as regards others. Asthmatic persons very rarely become tuberculous. The same is true of persons affected with organic lesions of the heart. Tuberculous patients seem to be insusceptible to the special cause producing typhoid fever. Acute rheumatism and tubercle are not often associated. Other illustrations might be cited. The incompatibility of certain diseases, however, can hardly be made available in practice; and, in short, our expectations from the future, as regards the discovery of prophylactic medicinal agents must needs be small were they to be measured by what has been already discovered.

2. A second object is the arrest of diseases. To arrest diseases *in limine*, cut them short, or, in the significant language of some French writers, jugulate them, is, obviously, an object in desirableness ranking next to prophylaxis. But as regards the extent to which this is practicable, how different the popular belief from the present views of the best informed members of the profession! The notions of the public concerning medical matters generally emanate from the profession, and the reason why patients expect diseases to be arrested is, the ability to do it has been assumed by physicians. It is not long since physicians conscientiously believed that they often strangled diseases which now they are content to allow to run their course. It is only a few years ago that inflammations and most of the essential fevers were considered to be amenable to what have been called abortive measures of treatment. Popular notions are not readily changed, and, with respect to this point, our knowledge is simply in advance of

public faith. But why is it that physicians were formerly self-deceived in this regard? Chiefly because the art of diagnosis had not been brought to such perfection as it has been within the past few years. Patients with an attack of pleurodynia or intercostal neuralgia, for example, were often thought to have acute pleurisy or pneumonia. A copious venesection, an active purge, and a blister, appeared to check, at once, the progress of the inflammation. The pain was in fact suspended, and although the recovery from the effects of the remedies may have been slow, the treatment appeared to be signally successful. Neuralgic affections had been comparatively but little studied, and were often confounded with inflammatory affections. Practitioners thought that they contended with inflammation of the bowels and brain much oftener than now. Ephemeral fevers were considered to be examples of continued fever broken up. As we have improved in diagnosis, the resources of therapeutics have seemed to be curtailed. Yet, what an improvement is it that the active treatment formerly in vogue to arrest many diseases, is no longer resorted to for that end! Conservative medicine has here gained much in the way of protecting the body against the evils of needless therapeutical measures.

On the other hand, conservative medicine has gained much in the way of abortive treatment in certain affections. The periodical fevers are arrested with much more promptness and certainty than some years ago. This is true of certain functional disorders, such as colic, cholera morbus, and certain forms of neuralgia, by means of the bolder use of certain remedies, especially quinia and opium. We can count on the arrest of some diseases, but it must be confessed, the number is very limited, not embracing those which are the most frequent, viz: inflammations and other than the periodical fevers. Here is ample scope for future discoveries which may enlarge beyond our present powers of calculation the resources of practical medicine.

3. A third object is the cure of diseases. I use the word cure in its conventional sense. From its etymology it should denote simply the care (*cura*) of the sick. And the latter signification expresses the true function of the physician. His business is to take care of the sick, which means, watching the course of disease, applying the art of diagnosis and of prognosis, bringing to the bedside his knowledge of the natural history and laws of different affections, regulating hygienic conditions, exercising a proper moral influence, and prescribing remedial agents where these are required. Thanks in behalf of the character of the profession, medical practice bids fair to become something higher in the estimation of the public than the administration of drugs! The time is coming when the idea of the doctor will be less inseparably associated than heretofore with the lancet and pill box! But using the term cure in its conventional sense, it means the exercise of a controlling influence, to a greater or less extent, over diseases. And as an object of therapeutics, the curative

treatment will embrace measures which abridge the duration of diseases, diminish their severity, or which influence favourably their progress in any manner and conduce to a favourable termination.

As with the arrest, so with the cure of diseases, the efficiency attributed to therapeutical interference would seem to have decreased in proportion as our knowledge has advanced. Physicians formerly congratulated themselves on curing diseases which ceased by their own limitations, and which had no tendency to a fatal result. The recovery was considered as proof of a cure having been effected, and that they were not indefinitely prolonged, was evidence of their duration having been abridged. The study of the natural history of diseases within the last few years has led to the knowledge of the laws of self-limitation, and of the amount of danger which belongs to them intrinsically. The consequence is, the physician is content to assume to be more the servant, and less the master of nature. He undertakes less, and nature has the opportunity of accomplishing more. Here, too, popular belief has not kept pace with the improvement of medicine, and patients are often not satisfied to be taken care of, but expect to be cured. Unquestionably, cases of disease are better managed now than heretofore, and the improvement involves, in part, less reliance on certain therapeutical agents which were formerly considered as curative. I refer more particularly to the so-called antiphlogistic measures. We should not hesitate to acknowledge this fact. It is certainly no disparagement to medicine that it has improved, and it must be expected that improvement will consist, measurably, in the correction of errors, as well as in newly acquired resources. But the improvement is by no means wholly of this negative character; it consists, measurably, in the employment of more efficient curative treatment. Of the latter, the free use of opium in acute inflammations, and especially in acute peritonitis, is the most prominent example. The use of large doses of the iodide of potassium in syphilitic periostitis, and in some of the forms of chronic inflammation, and of quinia as a curative remedy in remitting and yellow fever, and in certain cases of neuralgia, may also be cited in the same category.

The antiphlogistic measures of treatment were formerly employed too indiscriminately because inflammations were not accurately discriminated from other affections; and too freely because undue reliance was placed on their curative influence. What is the correct estimate of their efficiency? This is a question which every reflecting physician cannot but have propounded to himself. Do bleeding, cathartics, antimony and other sedatives, mercurialization, etc., exercise curative influence over acute inflammation? Do they contribute nothing toward diminishing the intensity of inflammation, shortening its duration, limiting the amount of exudation, and favouring resolution? If not, these measures always do harm, and should never enter into the treatment of inflammation. There are observing and thinking physicians who adopt the latter view, and there are those who still

have great faith in the efficacy of these measures. The truth probably lies between these extremes. For one, I am not prepared to ignore entirely the experience of candid, sagacious observers for many past generations. I believe that these measures may exert a certain amount of curative influence, and that whether they do harm or good depends on the discrimination with which they are employed. If resorted to injudiciously, the harm will preponderate over the good; and if judiciously employed, their use will undoubtedly be much restricted as compared with the past.

This train of remark has opened up a large topic which I cannot here discuss. I shall leave it after pointing out a highly important practical application of the *juste milieu* doctrine with regard to antiphlogistic measures. And I am led to make this application because it involves, as it seems to me, a nice exemplification of conservatism. There are certain inflammations, to which reference has been already made, which destroy life, not from their extent or intensity, but from circumstances incidental to their situation. This is true of acute laryngitis. The same amount of inflammation situated elsewhere, would be trifling; here it is fatal by causing obstruction at the larynx. Capillary bronchitis is an analogous example; the danger is from the obstruction of the small bronchial tubes. Acute meningitis is another example; the danger is chiefly from compression by the products of inflammation. Patients die from these inflammations by apnœa. On the other hand, the source of danger in inflammations situated elsewhere is, generally, in the disturbance of the system and failure of the vital forces. Patients die in most cases by asthenia. Now, in the latter inflammations, the evils of the antiphlogistic measures have reference to the source of danger and the mode of dying; and the problem is, to determine whether the curative influence of these measures, as regards the local affection, will overbalance their effect on the powers of life, or *vice versâ*. In the one case good, and in the other case harm, will preponderate. But in the former inflammations there is not the same need of sparing the powers of life. The danger is not from the giving way of these. Hence, we may consider chiefly, in such cases, the curative influence of antiphlogistic measures as regards the local affection; or, in other words, we have not to balance the probabilities of good or harm as in the previous problem, but simply to secure all the good to be obtained by their judicious employment. This mode of reasoning will be likely to lead to the continued use, to a greater or less extent, of antiphlogistic measures in certain inflammations, albeit their use may be generally abandoned as either unnecessary or as doing more harm than good.

The fourth object is palliation. Palliative measures enter largely into the management of diseases. They mainly constitute the treatment in two classes of cases: *first*, in those in which the disease pursues a favourable course without the need of active interference; and, *second*, in those which offer no encouragement for curative treatment. Relief of pain or distress

is an important object of treatment irrespective of the issue of a disease; and it is to be reckoned among the recent improvements in practice not least in importance, that physicians are not now to be restrained, as they have been, in the use of opium and other anodyne remedies, by apprehensions of their unfavourable influence on the progress of various affections. We hear much less nowadays than formerly of the danger of producing cerebral congestion or locking up the secretions by opiates, notions which often deprived patients of the comfort and advantage to be derived from their use. Palliative measures, although addressed to symptoms, and not to the disease *per se*, may, nevertheless, be to a greater or less extent curative by diminishing the general disturbance and consequent exhaustion incidental to the continuance of suffering.

The fifth object is support. Pre-eminent among the characteristics of conservative practice is the employment of supporting measures in all cases of any disease, whatever be its name, character, or situation, in which danger from failure of the powers of life is to be looked for. Of the importance of this object enough has been already said in the course of the foregoing remarks. Suffice it to add a consideration having reference to the value of support in cases which are unattended with danger to life. In emerging from an acute disease of any kind, a patient who has been judiciously supported by tonics, nutritious food, and, if need be, alcoholics, enters upon convalescence with vigour of body and mind far less impaired than if this object of treatment had not received appropriate attention, and the complete restoration is more rapid. A comparison of the condition of patients, now and formerly, after the termination of diseases in convalescence and recovery, would perhaps afford a stronger contrast illustrative of improvement in practice, than a comparison of the rates of mortality. This contrast is, in part, due to differences pertaining to the employment of curative measures of treatment, but, in no small measure, also, to differences of management as regards supporting measures.

The foregoing classification of therapeutical objects does not embrace, distinctly, a class of measures which hardly ranks inferior to any in its bearing on the management of diseases. I refer to sanitary or hygienic measures, relating to air, temperature, diet, cleanliness, climate, moral influences, etc. The subject of this essay embraces only considerations relating to therapeutics. *Conservative medicine, as applied to hygiene*, is a subject not less fruitful in practical considerations. This subject is reserved for a future essay.

ART. III.—*Report of Fifty-seven Cases of Amputations, in the Hospitals near Sharpsburg, Md., after the Battle of Antietam*, September 17, 1862. By G. J. FISHER, M. D., of Sing Sing, N. Y.

THE battle of Antietam was fought on Wednesday, September 17, 1862. The aggregate loss of both armies, estimated approximately, in round numbers, was 5,000 killed and 20,000 wounded. In their retreat across the Potomac, the enemy left between fourteen and fifteen hundred of their more severe cases of wounded to the tender mercies of the victors. They were crowded into farm-houses, barns, stables, sheds, and negro shanties, with more or less straw or hay beneath them, as they had been brought off from the field of battle. Every building in the region had been thus appropriated, regardless of its location, salubrity, capacity, convenience, or adaptation to the purpose in any other particular except as affording a shelter, more or less complete, from the direct rays of the sun or from rain.

Dr. Letterman, Medical Director of the Army of the Potomac, had detailed Dr. Roche, U. S. A., to take the general charge of all the prisoners. Dr. R. soon ascertained that there was a deficient force of rebel surgeons to give proper attention to their wounded; he accordingly sent to their aid a number of Union volunteer surgeons. The writer was among the number, and was placed in charge of Kershaw's brigade hospital, which was but a portion of McClain's division hospital, containing over two hundred wounded men. The number of patients under my exclusive care was a little over sixty; for this hospital (Kershaw's) one orderly had been detailed as *cook*, and another as attendant on the surgeon. The *hospital* comprised one small old farm-house, without any furniture, not even a chair, two negro huts, and one cow stable, the earth floor covered to a depth of two feet with manure, the top slightly strewn with coarse straw. Most of the hospitals had similar wards. The men were sadly deficient in blankets and clothing. Their personal condition was extremely wretched; they were begrimed with filth and alive with parasites. Notwithstanding their total neglect of cleanliness, they were almost invariably hardy men, capable of enduring great fatigue and privation. They were thoroughly inured to hardships, and had cheerfully performed the rigid requirements of their service. They were not desponding, although they were wounded and left prisoners in our hands. They were grateful for the least favour, and hopeful of recovery. Such was the general condition of the rebel prisoners for several days after the battle. The government, but particularly the U. S. Sanitary Commission agents, as soon as practicable, furnished a liberal supply of the most essential articles for the treatment of the wounded, including bed-sacks, blankets, clothing, stimulants, food, &c. These needed supplies, with kind attention, gave the men great cheer, and filled their hearts with gratitude, which doubtless had a material influence on their recovery. Before the stock of carefully prepared food and stimu-

lants was received, the wounds indicated a deficient vitality, which soon changed under an improved regimen.

While engaged in the care of the rebel wounded, the writer learned that no records were kept by the surgeons, except a list of deaths. Being struck, by this neglect, with the loss of so many valuable facts, and so much material for the formation of reliable statistical tables, from which important principles and rules, if not laws, could be deduced for future use in military surgery, a few minutes were set apart each day for recording the history of interesting cases of wounds, and particularly cases of amputation and resection. The materials for the following tables were collected in the houses in the vicinity of my own hospital. Had I remained a week or two longer, the statistics of several hundred cases could have been collected, without interfering with my special daily duties.

What is most needed to aid in this work is a supply of blanks. The following tables are given as an example, subject to such modifications as the Surgeon General or Medical Inspectors may think proper to make. By furnishing a few well-arranged blanks for different classes of surgical cases to each member of the medical staff, a vast number of facts would be rescued from oblivion, which, by their accuracy, being taken on the spot, and their uniformity in regard to the method of record, would be valuable contributions to our science and art.

The "*present condition*" of all the patients given in the following tables was carefully taken in the afternoon of October 1st, sixteen days after the battle. It is admitted that the time was rather short to speak with entire certainty in regard to prognosis, yet it is my opinion that all will recover who are there said to be "*doing well.*" The relative advantage of *primary* and *secondary* amputation was clearly demonstrated so far as my observations extended. It was gratifying to discover among nearly all the surgeons with whom I had communication, especially those who had been over a year in the service, a growing or fixed principle of action in reference to this point. Many confessed that they had learned, too often by sad experience, that amputations had been delayed, under the impression that the shock of the operation, added to the original injury, would increase rather than lessen the danger to the patient, and that in the mean time it would perhaps be thought best to attempt to save the limb, providing no bad symptoms ensued. Macleod, in his *Notes on the Surgery of the Crimea*, says: "The experience of the Crimea in favour of early operation was unequivocal in both armies, and needs no illustration from me." He adds in a note: "I am led to understand, from a very well-informed source, that the Russians also lost two-thirds of all their secondary operations, but saved a fair number of their primary."

I was informed by the rebel surgeons that secondary amputations were much more frequent in their early military experience than at the present time, which corresponds with a statement of Macleod in his *Notes*.

The extreme desire to be conservative, by the sacrifice of as few limbs as

possible, led to a great number of unsuccessful attempts to preserve more or less of an extremity, by resection, or trusting to the hope of reunion. By far the majority of resections after gunshot injuries of the bones, have resulted in failure, and very few who have watched the progress of the case now look upon the operation with favour, but consider it questionable conservative surgery.

The profession, civil rather than military, is still divided on this subject. The distinction between cases of disease and accident has not been made with sufficient clearness, and doubtless this has led to indecision, hesitancy, and fatal delays. The accumulated experience of every recent war has been so uniform and positive on this point, that it should be regarded henceforth as a settled question, a demonstrative, yes, a surgical *law*, that in any case where amputation is required after a gunshot or other injury, every hour the operation is delayed diminishes the chances of a favourable issue. In regard to shock, which is regarded with so much dread, and assigned as a reason for delay, it is now well known that it is not established for some time after the receipt of the injury; the interval varies in different cases, but is long enough in most cases to afford time for amputation. If this "precious moment," as Macleod calls it, cannot always be seized, Longmore assures us that if the "shock" is moderate in degree, this is not a sufficient reason for delaying amputation. He adds: "A moderate exhibition of stimulus and a few consolatory words will often remove this, and, even though some faintness, pallor, and depression remain, no ill consequences ensue." In the Crimea the operation was frequently done before the shock had disappeared, and with impunity.

Longmore says: "The introduction of chloroform, by its negative operation of preventing pain or alarm, and by its positive action as a stimulus, has done much to remove many of the objections which have been urged against early amputations after gunshot wounds."

Macleod gives his testimony of chloroform thus: "If we believe, as I certainly do, that by the use of this anæsthetic all fear of intensifying the shock is obviated—which was one reason why surgeons delayed operation—then the tendency of military surgery, since the introduction of chloroform, must be to still earlier and more prompt interference."

With the excessive duties which an active campaign or the results of a battle impose upon the surgeons, it is difficult to find time or inclination to collect and record materials for reliable statistical tables. This difficulty could be greatly overcome by the medical department furnishing blanks, with appropriate headings for all the facts desired on any subject. In case the patients are removed from the care of the surgeon who kept the record, a copy of the partial record should be sent with the patients, to be completed as time developed the desired information. I have not learned that any such means have been taken by the Surgeon General of the U. S. army, and though I pray God may soon end this horrible civil war, yet it may not be too late to issue proper blanks, by means of which much valuable information may be collected, whereby certain points may be finally settled.

TABLE I.—*Amputations of the Thigh.*

No.	NAME.	AGE.	RANK.	REGIMENT.	NATIVITY.	PREVIOUS HEALTH.	MISSILE.	CHARACTER OF WOUND.	DATE OF AMPUTATION.	MODE.	POINT OF AMPUTATION.	DATE OF DEATH.	CAUSE OF DEATH.	PRESENT CONDITION AND REMARKS.
									1862			1862		
1	Alf'd Williams	25	Private	13 Miss.	America	Good	Minie ball	Extensive wound of knee-joint.	Sept. 18	Flap	Low. third	Sept. 21	Pyemia	Hemorrhage on battle-field; maggots in stump.
2	Jesse W. Young	22	"	13 "	"	"	"	Left knee-joint, very badly.	" 20	Circular	"	....	....	Doing well; will recover.
3	J. McNutt	26	Lieut.	17 "	"	"	Shell, frag.	Patella shot off; lateral dislocation of head of tibia.	" 18	Flap	"	Sept. 19	Shock & exhaustion	Died on the battle-field, 30 hours after wound.
4	J. G. Rainwater	28	Private	18 "	"	"	Minie ball	Comminuted fracture of tibia, and wound of anterior tibial artery.	" 19	Circular	"	" 22	Pyemia & mortification of stump	Gangrene of leg before amputation was performed.
5	R. Lence	35	"	18 "	"	"	"	(Not ascertained).	" 17	"	"	" 21	Pyemia	Crowded hosp., bad air, &c.
6	W. R. Bryant	18	"	18 "	"	"	"	Injury to left knee-joint, fracture of patella, &c.	" 18	Flap	"	....	....	Doing well.
7	John B. Rate	23	"	15 Va.	"	"	?	(Not ascertained).	" 17	Circular	" left	Sept. 30	Pyemia	
8	Wm. H. Brigs	30	Serg'nt-major	15 "	"	"	Minie ball	Comminuted fract. of left femur.	" 17	"	"	....	....	Doing well; same ball cut off right middle finger.
9	Thomas Rudd	28	Private	32 "	"	"	"	Passed through right knee-joint.	" 18	"	Below mid.	....	....	Doing well.
10	—— McNeal	34	Lieut.	10 Ga.	"	"	"	Comminuted fracture of right femur just above knee-joint.	" 17	"	Middle	....	....	"
11	J. G. Tate	20	Private	53 "	"	"	"	Comminuted fracture of left tibia, extending into the knee-joint.	" 29	"	Low. third	....	....	Leg infiltrated with pus before amputa'n, which operation should have been done immediately after the wound was received; prognosis doubtful.
12	J. B. Burnett	31	"	1 S. C.	"	"	Gr'pe shot	Comminution of left knee.	" 18	"	Middle	....	....	Some sloughing has occurred; he is now doing well.
13	F. M. Cantrell	30	"	7 "	"	Bad	"	Comminuted fracture of tibia, extending into right knee-joint.	" 18	Flap	"	Sept. 25	Pyemia	Flaps sloughed.

TABLE II.—*Amputations of the Leg.*

No.	NAME.	AGE.	RANK.	REGIMENT.	NATIVITY.	PREV'S HEALTH.	MISSILE.	CHARACTER OF WOUND.	DATE OF AMPUTATION.	MODE.	POINT OF AMPUTATION.	DATE OF DEATH.	CAUSE OF DEATH.	PRESENT CONDITION, AND REMARKS.
									1862					
1	Lawr'ce Smith	31	Serg'nt	10 Ga.	America	Good	Minie ball	Comminuted fracture of tibia and fibula, lower third, left leg.	Sept. 18	Circular	Middle	....	....	Flaps partially sloughed; is now doing well.
2	M. J. O'Brien	31	Private	10 "	Ireland	"	"	Comminuted fract. of right tibia.	" 18	"	Upp. third	....	....	Flaps partially sloughed; is now doing well.
3	Wm. Tucker	21	"	13 Miss.	America	"	"	Left tibia and fibula comminuted near ankle.	" 17	Conical	Middle	....	....	Doing well.
4	W. T. Shell	24	Serg'nt	18 "	"	"	"	Right ankle-joint smashed.	" 18	Circular	Low. third	....	....	"
5	A. J. Farrar	19	Private	18 "	"	"	"	Left tibia and fibula comminuted.	" 18	Post. flap	Middle	....	....	"
6	E. F. Harwood	30	"	18 "	"	"	"	Right tib. and fibu. comminuted.	" 18	"	"	....	....	"
7	D. P. Peebles	22	"	18 "	"	"	Shell	" " "	" 19	"	"	....	....	"
8	James O'Brien	30	"	1 Va.	Ireland	"	Minie ball	Left tibia comminuted.	" 19	"	"	....	....	Flap sloughed; recovery is doubtful.
9	W. J. Kidd	26	"	49 "	America	"	"	Left ankle-joint smashed.	" 17	"	"	....	....	Doing well.
10	W. H. Powell	20	"	3 S. C.	"	"	Grape	Right ankle-joint smashed.	" 18	Flap	Low. third	....	....	Entire flap sloughed off; now doing well, and will recover without doubt.
11	R. D. Crawford	27	"	6 "	"	Bad	Minie ball	Right tibia and fibula near ankle.	" 18	Circular	"	....	....	Flaps sloughing; line of demarcation well defined; will probably recover; strength improving, &c.
12	J. H. Barwick	20	"	6 "	"	Poor	Shell	Right tib. and fibu. comminuted.	" 17	"	"	....	....	Doing well.
13	John F. Spath	26	Serg'nt	1 La.	Germany	Good	Minie ball	Right tibia and fibula near ankle	" 18	Post. flap	Upp. third	....	....	"
14	J. R. Lawrence	33	Lieut.	1 "	America	"	"	Right ankle-joint smashed.	" 17	"	Middle	....	....	"
15	H. Hobert	26	"	2 "	"	"	"	" " "	" 17	"	Mid. & up. third	....	....	Some sloughing of flap; now doing well; will recover.
16	W. Dornscheid	28	Private	5 U. S. Artil'ry (Union soldier)	Germany	"	Shell	Left tibia and fibula comminuted below the middle.	" 19	Circular	Little ab've middle	....	....	Doing well.

TABLE III.—*Amputations at the Shoulder-joint.*

									1862			1862		
1	J. M. W. Hardie	19	Private	17 Miss.	America	Good	Minie ball	Comminuted fracture of right humerus.	Sept. 17	Flap	Shoulder-joint	....	....	Doing well.
2	J. L. Davis	20	"	2 S. C.	"	Bad	"	Comminuted fracture of left humerus.	" 18	"	"	Sept. 25	Pyemia	No attempt at union; no vital energy.
3	W. H. Harrison	46	"	Peyton's bat., Va.	"	Good	Shell	Left arm torn to pieces, &c.	" 18	"	"	....	....	Doing well.
4	W. C. Sansom	16	"	44 Ga.	"	"	Minie ball	Right humerus, comm'ted fracture at head.	" 17	"	"	....	....	"

TABLE IV.—*Amputations of the Arm.*

Table IV.—*Amputations of the Arm.*

No.	Name.	Age.	Rank.	Regiment.	Nativity.	Prev'us health.	Missile.	Character of wound.	Date of amputation.	Mode.	Point of amputation.	Date of death.	Cause of death.	Present condition and remarks.
									1862			1862		
1	Wm. B. Wicker	21	Private	15 Va.	America	Good	Minie ball	Extensive injury of elbow-joint, brachial artery wounded.	Sept. 22	Conical	Middle	Sept. 25	Pyemia	This was a secondary amputation; the arm was entirely infiltrated with fetid pus before the operation.
2	L. B. Pursell	20	"	24 Ga.	"	"	"	Extensive injury of left elbow-joint.	" 23	"	Above mid.	" 30	"	Secondary amputation; arm infiltrated to wrist with putrid pus before operation.
3	Wm. Gibbs	25	Serg'nt	32 Va.	"	"	"	Passed through right elbow-joint.	" 18	Circular	Middle	....	....	Doing well.
4	John J. Bolfer	26	Private	49 "	"	"	"	Left humerus comminuted.	" 18	Ant. and pos. flaps	Near shoulder-joint	....	....	"
5	G. G. Adams	17	"	10 Ga.	"	"	"	Through left elbow-joint.	" 17	Flap	Middle	....	....	Doing well; same ball entered the side; wound not severe.
6	J. N. J. Bramlett	19	"	24 "	"	"	"	Right hum'us commi'ted at mid.	" 18	Circular	Upp. third	....	....	Doing well.
7	J. T. Clark	27	"	24 "	"	"	"	Left humerus, comminuted fract.	" 18	Flap	Up. & mid. third	....	....	"
8	Z. Harland	18	"	53 "	"	"	"	" " "	" 18	"	"	....	....	"
9	G. P. Haw	23	Lieut.	15 Va.	"	"	"	Comminuted fracture of humerus above elbow-joint.	" 17	"	Middle	....	....	"
10	J. S. Malone	22	Private	13 Miss.	"	"	"	Left elbow-joint comminuted.	" 17	Circular	Low. third	....	....	"
11	J. H. Smith	27	"	17 "	"	"	"	Right elbow-joint injured.	" 17	"	Middle	....	....	"
12	W. P. Dulaney	18	"	18 "	"	"	Grape	" "	" 17	"	Low. third	....	....	"
13	J. W. Pearson	22	"	18 "	"	"	Musket b'l	" "	" 17	Flap	"	....	....	"
14	W. Chaney	26	"	2 S. C.	"	"	Minie ball	Right humerus fractured and arm lacerated.	" 17	Ant. and pos. flaps	Upp. third	....	....	Biceps sloughed out; fungus of medulla; is doing well.
15	D. M. Kirkley	30	Corp'al	2 "	"	"	Grape	Right humerus fractured and elbow-joint injured.	" 17	Lateral flaps	"	....	....	Doing well.
16	W. J. McDowell	24	Private	5 "	"	"	Shell	Left elbow-joint smashed.	" 17	Flap	Low. third	....	....	"
17	W. P. Castles	19	"	6 "	"	"	Minie ball	Right radius and humerus comminuted above and below elbow-joint; arm was flexed.	" 18	Circular	Middle	....	....	"
18	J. W. Martin	31	"	6 "	"	"	"	Right humerus and elbow-joint smashed.	" 18	"	Upp. third	....	....	"
19	Jos. Lehman	23	"	4 Texas	Germany	"	Grape	Left humerus comminuted at middle.	" 17	Flap	Near shoulder-joint	....	....	"
20	T. J. Richards	41	Serg'nt	9 N. H.	America	"	Minie ball	Right elbow-joint smashed and lacerated.	" 17	Circular	Mid. & low. third	....	....	Nearly well; on his way home. (Union soldier.)

Table V.—*Amputations of the Forearm.*

									1862					
1	James E. Dodd	34	Private	10 Ga.	America	Poor	Minie ball	Left wrist, bones comminuted.	Sept. 18	Circular	Below mid.	....	....	Doing well.
2	J. C. Lowe	22	Serg'nt	13 Miss.	"	Good	Grape	Right wrist lacerated and comminuted.	" 17	"	Low. third	....	....	"
3	S. W. Rowan	18	Corp'al	2 S. C.	"	"	Minie ball	Right radius and ulna, comminuted fracture.	" 17	Ant. and pos. flaps	Upp. third	....	....	"
4	E. F. Hastie	23	Private	11 Ala.	"	"	"	Left radius and ulna, comminuted fracture.	" 17	Ant. and pos. flaps	Low. third	....	....	"

The whole number of cases of amputations, given in the above tables, is fifty-seven; the mortality, including two cases where the prognosis is noted as doubtful, amounts to eleven, the percentage being 19.47.

Of the lower extremities there are twenty-nine cases, of which eight were fatal, if we include the two cases of doubtful prognosis; the fatality being 27.58 per cent.

There are twenty-eight cases of amputations of the upper extremities, three resulted fatally, 10.71 per cent.

Of amputations of the thigh thirteen cases are given, seven were fatal, including one of doubtful prognosis, mortality 53.84 per cent.

Sixteen amputations of the leg are recorded with one fatal case, 6.25 per cent. This *fatal* case was still living (Case 8), it was by no means certain that he would die; should he recover, we would have sixteen cases of amputation of the leg, and no fatal result.

Amputation at the shoulder-joint was performed in only four cases, one died; mortality 25.00 per cent.

The arm was amputated in twenty cases, of which two patients died; 10.00 per cent.

The amputations of the forearm were all successful.

With regard to the "mode" of performing the amputations, twenty-nine were by flaps; viz., thigh four, leg nine, shoulder-joint four, arm ten, forearm two. The circular method was resorted to in twenty-eight cases; under this head are included the ordinary circular, and the more decidedly conical mode; viz., thigh circular nine, leg circular six, conical one (= 7); arm circular eight, conical two (= 10).

Of the twenty-nine flap operations, five were fatal, 17.02 per cent.

Of the twenty-eight circular operations, six were fatal, 20.68 per cent.

The four cases of secondary amputation were all fatal; it is quite probable that they would have recovered had the operation been done immediately after the receipt of the wounds.

The projectiles or missiles inflicting the injuries, as far as could be ascertained, were minie balls in forty-two instances, 75.00 per cent.; grape shot in seven cases, 12.50 per cent.; fragments of shell in six, = 10.71 per cent.; musket ball in one, 1.78 per cent. In thirty of the cases joints were directly implicated (54.54 per cent.); viz., knee-joint eight, ankle-joint five, shoulder-joint one, elbow-joint fourteen, wrist-joint two.

In several other cases, the injury is recorded in the tables as a comminution of the bones near the joints. In all the cases of amputation a serious lesion of one or more bones had resulted from the projectile, in no case had the operation been done without the most imperative necessity.

In the fifty-one cases where it was ascertained which side of the body received the injuries, twenty-eight were on the right side; viz., six of the thigh, ten of the leg, and fourteen of the upper extremities.

In twenty-three cases the injury was received on the left side; viz., thigh five, leg six, upper extremities twelve.

The nativity exhibits fifty-two Americans, three Germans, and two Irish.

In reference to ages, the youngest soldier was sixteen years of age, the eldest forty-six. The number less than 20 years of age was ten, from 20 to 30 years thirty-two, from 30 to 40 years thirteen, from 40 to 50 years two.

In regard to rank, fourteen were officers; viz., five lieutenants, seven sergeants, and two corporals; the remaining forty-three were privates.

Pyæmia is recorded as a cause of death in eight cases.

Chloroform was used in all the cases.

Of the fifty-seven cases of amputations, twenty-five were done September 17th, the day on which the battle occurred, most of them at night, only one case proved fatal.

Sept. 18, twenty-four amputations were made, three of which were fatal.

Sept. 19, four amputations, two fatal cases.

Sept. 20, one amputation; doing well.

Sept. 22, 23, and 29, one amputation each day, the first two fatal, and the third probably so.

It is proper to state, that great care was taken to obtain and include the histories of all the fatal cases that had occurred from amputations after the battle, at all the houses where the statistics were collected. The writer was particular in his personal examination of all the stumps, and in his observations as to the vital condition of the patients, and in all doubtful cases to consult with the surgeons in charge in reference to the prognosis. Wherever, in the remarks included in the tables, the patient is said to be "doing well," it is confidently believed that he will recover.

It may be urged, as an evidence of the entire want of value of the above tables, that the facts were collected too early in the history of the cases, that many cases, from a variety of causes, would terminate fatally after the sixteenth day from the date of operation. The writer is aware of this objection, but being unable to remain longer with the patients, he was compelled to prematurely collect the materials to rescue the facts from entire loss. He thinks, however, that at the end of sixteen days the *tendency* to recovery or death ought to be quite definitely determined, but his chief apology is, as elsewhere mentioned, that the materials were arranged and published with a view to illustrate a uniform plan of reports, rather than for their intrinsic value.

ART. IV.—*On Trismus Nascentium.* By GREENSVILLE DOWELL, M. D., Columbia, Brazoria County, Texas.

MY attention was first drawn to the pathology of trismus nascentium, by the paper of Dr. Sims, formerly of Montgomery, Ala., now of New York, published in this journal. (See Nos. for April, 1846, July and Oct. 1848.) That writer adduced a number of cases to show that the disease resulted from compression of the brain caused by the overlapping of the

bones of the cranium. An opportunity was soon after afforded me, in Panola County, Miss., where I then practised, of testing the correctness of these views. I was called to a case on the plantation of Mrs. H., in which there was evidently displacement of the occiput, and I immediately determined to try Dr. Sims's practice. I placed the child on its side on a pillow, and changed it from one side to the other. I directed its bowels to be moved with sweet oil, and in a few hours the spasms subsided, the child could nurse, and in a very short time it was quite well, and is, I believe, now living. This was the first case of the disease I had ever seen recover; and Mrs. H., who was a very intelligent lady, the widow of a physician who had practised many years in Georgia, told me that this was the first case she had ever seen recover, and that she had lost many negro children with the disease, both in Georgia and Mississippi. The disease was quite common amongst the blacks in Panola County, but I never saw a case amongst the whites while I practised in that section. The success in this case quite elated me. In the next I was called to I adopted the same treatment, but could not discover that there was any displacement of the occiput or parietal bones. The treatment failed, and I made a post-mortem examination, but could not discover any organic or mechanical injury about the head. The umbilicus was well healed, but there was dark blood in the umbilical vein, and a yellowness around the navel. The liver was congested, and the gall-bladder filled with dark thick bile. The bowels were empty, and apparently entirely healthy.

This case led me to think that the primary cause of the disease was in the umbilicus, and brought on by congestion of the liver, induced by coagulation of the blood in the umbilical vein. Several times since I have found these changes in post-mortem examinations, and am free to declare that the majority of the cases I have met with have been of this character. The only case in a white child I have seen in this county was of this character, and as the case is an interesting one I shall give the particulars of it.

Mrs. S., the wife of an overseer, was taken very suddenly in labour, and as I lived some nine miles distant, they sent for a very intelligent negro midwife, but the child was born before she got there; the placenta was thrown off with the child. She cut the cord about six inches from the umbilicus, and wrapped it with a tape string up to the umbilicus. The umbilical cord came off at the usual time. About the eighth day the child refused to nurse, and spasms came on, and with each spasm there was hemorrhage from the umbilicus. They sent immediately for me. I tried to stop the hemorrhage with nitrate of silver, but to no effect. I then put two needles through the base of the umbilicus, and a ligature beneath them. This stopped the hemorrhage for a while, but it returned in about four or five hours. By tightening the ligatures the hemorrhage was kept down, but the spasms continued to return, and finally the child starved to death, though the spasms were sufficient to kill it.

Other cases which have come under my observation I have thought were

brought on from the irritation of the meconium; the children of this class not having proper attention. The bowels in these became distended, and when they were moved by medicine, the discharges were frequent and too watery. Finally, the child would not suck, and spasms followed. Another cause, it appears to me, has been the neglect, on the part of the nurses, of cleansing the body and head of the child at birth. This becomes a source of irritation, ultimately producing congestion of the brain and spasms. Some of our physicians think that there is a hereditary or constitutional tendency in the children of some mothers to take on this disease. We know that some mothers lose all their children with it. So much imbued are many of our planters with this notion, that often they tell the midwife if they can save such children they may have them. All such cases that have come under my care have been saved by the plan I shall presently describe for their treatment. With all my past experience and observation, I have come to the following conclusion:—

1st. That the disease is produced most frequently from improper management of the cord, and congestion of the blood in the umbilical vein; from this vein congestion spreads to the liver, and it becomes swollen and filled with dark blood, and the secretion of bile is entirely arrested.

2d. The next most frequent cause is the displacement of the occipital bones in parturition. We may always look for this cause in protracted labours.

3d. The retention of the meconium, and want of proper cleansing of the skin when the child is first dressed.

4th. And lastly, it may be produced from any cause that will produce tetanus in old persons. Cold, exposure to drafts of cold air; foul odours, such as emanate from old bedclothes, saturated with urine and besmeared with feces, which are often to be found in our negro cabins, when the masters are not particular to make the tenants wash and clean out their houses. Negroes often go to sleep and let their children fall or overlay them, which also brings on the disease. I believe I have seen it produced from all these causes.

The symptoms vary but little in this disease. Let it be produced from any one of these causes, the first symptom is a want of power in the child to nurse, or a disinclination, most generally; they will feed from a spoon, when they cannot suck.

It is almost sure to come on between the fifth and twelfth day after birth, generally about the ninth day; though it may occur any time within six months, and some think even within two years. I have not known any to occur at so late a period, and but one or two cases after thirty days. I always consider the child safe from the effects of mismanagement of the umbilical cord, if they live three weeks (Dr. Morris says fifteen days), never having seen a case that appeared to me to have originated after that time, from this cause. Those that occur from displacement of the occiput may

occur at any time within two years, as many negro children are left for three or four hours in one position, generally on the back. Often all the hair is rubbed off, and the body is confined in a small cradle with scarcely room to turn over. These boxes are very objectionable, and I always endeavour to prevail upon the parties to entirely banish them. I much prefer that the child should be laid on the floor, with only a blanket, than placed in the cradles in use by most of our negroes.

The spasms are various; sometimes only partial and scarcely perceptible, and at other times general and very severe. The abdominal muscles are contracted in nearly all cases during the spasms; in some cases one side alone appeared to be affected, and the muscles of that side of the face drew the mouth to one side in a most frightful manner. In most cases the hands are clenched all the time. The patients cry but little, but appear to suffer much when moved or handled.

Fever is occasionally, though not usually present; its occurrence indeed is the exception to the general rule. The tongue is generally coated with a white or brown fur.

When called to one of these cases, my first object is to ascertain from which of the causes enumerated the attack had originated. I begin my investigations with the head, as described by Dr. Sims, by examining all the sutures, to see if there is any overlapping, or if any of the bones are movable. If pressure on any one of them produces uneasiness or spasms, I press gently on the fontanelle, and if the disease is produced from the misplacement of any of the bones of the cranium, it will give the patient pain, and often produce a spasm. I press my finger gently on all the sutures, to see if the two edges meet, and that the head is smooth, and no thrombus or any perceptible misplacement. Should there be any, I immediately place them according to Dr. Sims's plan—on a soft bed: if the occiput is at fault, *on the side;* if the parietal, *on the back.* I direct them to be held to the breast on a pillow; do not allow the arm to be put under their head, as they are usually nursed; order them changed at least every two or three hours, whether asleep or awake. I have the bowels moved with sweet oil, and have them fed with a spoon sufficiently only to keep up their strength.

In those cases occurring from the umbilicus, I would rub the abdomen with an ointment of the iodide of mercury, gr. x to ʒj of lard, and give from one to five grains of calomel internally. I frequently have tried to control the spasms with a watery solution of assafœtida, made by pouring warm water on chipped assafœtida. This seemed to me to do good in some instances, and had a better effect than anything I have yet tried. The preparations of opium do no good; but stupefy the patient, and hasten its death. I use warm mustard baths in all cases, and nearly always with present relief to the spasms. I have blistered the umbilicus, but with no benefit.

Where the disease originates from any other cause, it should be found out and removed. If the skin is not entirely clean and all the dandruff gotten out of the hair, this should be done immediately, and the bowels moved with sweet oil or the calomel as in the last case. When they have fever, I never fail to give quinia, and generally with improvement of symptoms. I have cured a well-marked sore with calomel followed by quinia and assafœtida and mustard bath. I have several times blistered the spine; but to no effect. In nearly all cases I have used some liniment to the spine—generally sweet oil, ammonia, and turpentine—not strong enough to blister, as this interferes with the mustard bath, in which I have more confidence.

It is the general opinion of our physicians that after the spasms commence nothing can be done, and in that opinion I must concur. I have seen but three cases recover under any and all plans hitherto tried—the case related, and two others cured by the plan suggested above. I have relieved many cases, after they had refused to suck, by this plan, and I can speak of its efficiency with confidence. Our physicians are not often called until the case is hopeless, but I have lived nearly all my professional life on a plantation where there were from thirty to one hundred and fifty negroes, who were especially under my care, and it was my instruction to the lying-in women, as soon as their children would not nurse, to bring them to me. In that way I have cured many. Some with slight twitchings of the muscles have recovered without any trouble, by being put in a mustard bath, washed clean, and put in a clean and well ventilated cabin. I have tried ether and chloroform, but with no success.

Our main reliance is in prevention. Nearly every physician has his own method of treatment, and I will give mine, which I respectfully submit as appearing to me to be the most efficacious.

My first object is to have the house of the patient and all the bedclothes clean; and when this has not been previously attended to, I have it done as soon as convenient. Not more than four persons should be allowed to be in a cabin, and I would prefer only the nurse and husband to be there. As soon as the child is born and it has breathed, I tie two ligatures around the cord, the first at such a distance from the umbilicus—*say about half an inch*—as to give me a chance, should I not tie it tight enough, to put another between this and the umbilicus. The other ligature I put about an inch from the first, and cut the cord between them.

It has been the custom with our negro midwives, especially the Africans, to tie the cord about four or five inches long, and to coil it around on the abdomen. Most of them cut it about two inches long, so far as I know. And here I will mention a fact told me by Dr. S. A. Towsy:—

Several years ago he was employed to attend to the plantation of negroes now owned by Col. S., of this county, who are mostly Africans brought to this county before annexation. He had been told that they

lost all of their young children with this disease, and that the owner's intention was to see if he could not save them. That year there were born on the place thirteen children, and he attended eleven. The eleven he attended lived and did well; the other two died with this disease. He saw one of them with the disease, and, upon examination he found that the cord had been left some ten or eleven inches long, and was wound around in a coil upon the abdomen. There was tenderness over the liver and bowels, indicating that the disease originated from that source. He inquired of the midwife if that was the way she dressed all her children, and she said it was, and that they all died in the same way, and about the ninth day.

After cutting the cord, I have the child put in a tub of warm water, washed perfectly clean, head and body, and then I cut out a hole in a piece of soft linen and wrap the end of the cord in burnt cotton, and fold the linen over the cord and cotton, and then put the middle of the bandage over this, and pin it on the back. I have the bandage tight enough to prevent its slipping or moving about, but not to give pain. In this situation I recommend it to be kept for five days, noticing the bandage to see if there is any hemorrhage. I then direct the child to be carefully nursed, and not to be left too long in one situation; the head to be kept cool, and without any caps.

Under this plan I have not lost a single case that I have had special charge of. This is the experience of all those who have followed this plan or a similar one. A practitioner of our county gives half grain doses of calomel from birth, twice or three times a day, for nine days. This I think very objectionable, and, though calomel is good, where there is fever and a derangement of the digestive organs it should be given with judgment and caution. But I think this plan itself would often bring on the disease; and as the disease is more common in his neighbourhood than in any other portion of the county, I am inclined to believe it is from this cause. It has not been so frequent in the last two years as formerly. The obtaining of physicians in such cases more than before, and the improvement in their management, I think is the reason.

ART. V.—*Tracheotomy for the Removal of Foreign Bodies from the Air-Passages. With Cases.* By A. G. WALTER, Surgeon, Pittsburg, Pa.

SURGICAL operations, so dreaded in general, lose much of their terrors in cases where a foreign body having entered the air-passages, strangulation is imminent and delay is manifestly fraught with danger. Not only is consent to operative measures readily obtained, but often urgently demanded by the sufferer.

Tracheotomy though comparatively simple in its performance, and generally harmless in its consequences is not only too often neglected, but even too long delayed for the safety of the patient and the credit of the practitioner. Although the advance of modern surgical pathology has considerably lessened the frequency of operations, yet, with regard to foreign bodies impacted in the air-tubes, the rule must ever be that the knife should be early used as the most certain means of relief. The following cases but confirm the soundness of this time honoured practice.

CASE 1. John McCarty, of Pittsburg, aged six years, of good constitution, while playing with a *pebble* in his mouth, swallowed it as he supposed; violent convulsive efforts of coughing immediately followed. Emetics and purgatives were resorted to in order to dislodge the offending body from the stomach. The idea that it had entered the trachea being ridiculed by the medical attendant, and as some cessation of the violent fits of coughing occurred after some days, the parents were disposed to believe that the stone would eventually be removed by the natural channel. The respite, however, was of but short duration; paroxysms of coughing again became frequent, threatening suffocation, and the boy rapidly lost flesh and strength from fever and profuse expectoration. Three weeks after the accident had occurred, I was requested to see him. On examination of the chest by the stethoscope no unusual sound was heard in the right lung, while in the left loud mucous rales were present; during a fit of coughing a solid body was distinctly heard to move up and down; when it reached the larynx suffocation became imminent; on its descent it appeared to enter the right bronchus; there was hectic with night-sweats, continued restlessness and disturbed sleep. Convinced of the presence of a foreign body in the windpipe, I urged its immediate removal by operation; to this, with some difficulty, the parents consented, as they were led to believe that under no circumstances could anything by accident enter the larynx guarded as it was by the epiglottis as a safety valve. Having removed this false impression, I had recourse to Sir Benjamin Brodie's plan of inverting the body of the patient, but without benefit, the stone being too large to pass the highly irritated glottis. On April 6th, 1854, assisted by Dr. Gucnote, the trachea was opened to the extent of three-fourths of an inch in the median line below the crico-thyroid cartilage, the skin and cellular tissue having been previously divided, and the free bleeding having been arrested by cold and compression (no ligatures being required). On the interior of the windpipe being opened a violent paroxysm of coughing ensued, throwing up a large quantity of ropy mucus, closing the aperture and threatening suffocation; this being speedily removed and the lips of the wound being held asunder, mucus was freely ejected by coughing and with it an oval-shaped pebble of the size of a large bean was forcibly projected through the aperture. The relief was complete, and the paroxysm of coughing ceased. The lips of the wound having been cleansed of blood and mucus were approximated and retained by adhesive plaster, with the exception of its lower angle, which was left open to allow a free exit to secretions from the trachea. Considerable febrile reaction following, a vein was opened in the arm during the evening; with gentle antiphlogistics and proper regimen the case progressed favourably. The fever subsided, the cough ceased, sleep soon became natural and appetite returned; on the 4th day the patient left his bed, by the 10th day the wound had perfectly closed.

CASE 2. Chas. Fichtar, of Alleghany City, aged 16 years, was, while eating *chestnuts*, suddenly seized with a paroxysm of coughing and hoarseness. Suspecting that a portion of the nut was lodged in his throat, a probang was passed into the œsophagus by a practitioner. Relief was not obtained; various remedies were next prescribed to allay the cough, but without avail; the distressing symptoms still continued, the cause not being recognized. Fever, with loss of appetite and disturbed sleep, soon became superadded. It was now evident from the history of his case and continuance of distress that a part of the nut or shell had entered the larynx; the patient and his friends agreeing in our opinion readily consented to the operation. On July 12th, 1854, the treachea was opened to the extent of an inch, all bleeding having been previously arrested. As usual on the sudden entrance of air through a wound in the trachea, violent fits of coughing ensued, arresting momentarily examination of the interior of the larynx by forceps or probe. Every attempt to introduce either increased the spasmodic efforts at coughing. After some minutes' rest, the head of the patient being raised and the lips of the tracheal wound being held apart by blunt hooks, a small bent polypus forceps was gently introduced upwards into the larynx, from whence, after much careful exploration, half the shell of a chestnut was removed with instant relief, the fits of coughing immediately ceasing. The edges of the wound were next brought together and retained by adhesive plaster, over which water dressing was applied. During the evening a free bleeding from the arm controlled the vascular excitement which ensued, after which the case progressed favourably, the hoarseness soon subsided, and by the end of the 2d week the wound had closed.

CASE 3. Peter Frazer, of Pittsburg, aged 25 years, a labourer, was, while taking some meat soup, almost suffocated, a piece of *bone* having entered the larynx. The cough, as usual, was very distressing, accompanied with hoarseness and the sensation of a foreign body sticking in the throat. Emetics were tried; the probang passed into the esophagus repeatedly, and various remedies prescribed by his physician, extending over a period of two weeks; when, finding no relief, he sought admission into my hospital. There was then a teazing, laryngeal cough, with fever, restlessness, and frequent feeling of strangulation. Relief being urgently demanded, the trachea was opened without difficulty on the 16th of December, 1854, and with little loss of blood; a probe detected the solid body in the larynx, but the attempt to seize it with a bent polypus forceps was repeatedly frustrated by the violent efforts of coughing, which the introduction of the instrument excited. After some delay it was grasped and removed. It proved to be a sharp-pointed bone, three-quarters of an inch long, and one-sixteenth inch broad, which had lodged obliquely across the larynx. The relief to the patient was immediate. The wound was brought together by adhesive plaster, over which water dressing was applied. Venesection was had recourse to in the evening to allay inflammatory fever, after which no untoward symptom occurred; the cough and hoarseness subsided, and in sixteen days the wound had closed.

CASE 4. Jacob Steel, aged six years, of Alleghany City, was suddenly seized with violent fits of coughing, threatening suffocation, but unable to tell his parents what had happened, it was difficult to ascertain the cause. It was, however, discovered that a piece of *slate pencil* had by accident lodged in the windpipe. The probang, emetics, and other remedies were

resorted to without relief for some days. On the fifth day after the accident I was requested to see him. By the aid of the stethoscope, a foreign body was distinctly heard to move up and down during the efforts of coughing. On the 27th of April, 1855, assisted by Dr. Lusk, I opened the trachea to the extent of three-quarters of an inch. The struggles of the patient, the convulsive fits of coughing, and profuse flow of mucus from the wound, caused some delay; but after comparative quiet was restored, the patient was raised to a half-sitting posture, the wound cleansed and its edges held apart by blunt hooks, when a sudden fit of coughing brought the pencil into view; it was immediately seized and removed with safety. The wound was dressed as usual, an outlet being left at its lower angle; water dressings and antiphlogistic regimen constituted the treatment. In six days the patient left his bed. In two weeks the wound had closed.

CASE 5. Michel Fritz, aged 60 years, of Alleghany City, a cabinet-maker, of low stature, strong frame, large muscular development, and short neck, applied on account of a distressing cough and hoarseness of four weeks' standing. The history of his case was as follows: While playing with his child seated on his knee, he threw a *copper cent* repeatedly into his mouth, which suddenly disappeared, causing a feeling of choking, with violent coughing. Supposing the cent was resting in the throat, he ate bread and drank water, without, however, at all relieving the paroxysms of coughing; and though the cough brought on free vomiting, he became hoarse and unable to speak above a whisper. After some days, the violence of the cough subsided, as if he could not cough for want of breath. He feels as if the larynx was obstructed with something, and soreness is complained of in the part on pressure. His voice is feeble and croupy, and respiration oppressed but not accelerated. Respiratory murmur feeble, percussion normal, pulse 80. Feels chills and flashes of heat, sleeps badly, prefers the half-sitting posture in bed; is thirsty, has no appetite, and suffers from night-sweats. No mucous rales in the bronchia, nor expectoration. On passing a probang with a small piece of sponge attached into the esophagus, no difficulty was experienced; but on withdrawing, it seemed to be arrested, behind the larynx, by some projecting body, which offered considerable obstruction to its removal. It was difficult to persuade him that the cent had found its way into the larynx; fancied it had passed to the stomach, and would be ultimately expelled by the bowels; has been told so by his medical attendant, and the hoarseness and cough treated as a cold; but as no mitigation of his distress has been obtained by such treatment, his friends, with better judgment than his physician, insist that it must be in his windpipe, and urge him to seek admission into our hospital. I felt little difficulty in deciding, from the history of the case, from the obstruction in withdrawing the probang and the other general symptoms, that his was a proper case for tracheotomy. Accordingly, on the 16th of March, 1856, four weeks after the occurrence of the accident, the operation was performed in presence of Doctors Hageman and Pillichody. The neck being short and plump, the integuments and deep-seated parts gorged with blood, much difficulty was anticipated during the operation. The patient being placed in a half-sitting position, with the chin well raised, an incision was made from below the cricoid cartilage to the sternum, in the median line, through the skin and cellular tissue, which were unusually loaded with fat. The edges of the incision being held apart, the sterno-hyoid and sterno-thyroid muscles were separated from their fellows by slight touches of the

knife and a probe. Having arrested the profuse bleeding by cold and compression, and removed the thick layers of fat found above and beneath the deep fascia of the neck, the arteria thyroidea ima was seen running in front of the trachea, a small branch of which having been cut had to be ligatured. From the shortness of the neck and the quantity of fat, the depth of the wound was nearly one and a half inches. The trachea being thus exposed, the tissue immediately covering it was removed by a probe, the artery carefully held aside, and the trachea was then pierced by the knife, and four of its rings divided in an upward direction. They were found rigid, from commencing ossification. Immediately on opening the trachea, violent coughing ensued with profuse bleeding, both from the wound and from the congested mucous membrane. The patient had to be raised, the edges of the wound held apart to allow free egress to the blood from the trachea, and the breathing to become quiet. This being accomplished, the trachea was sounded by a flexible urethral sound upwards and downwards, which provoked renewed fits of coughing, with bleeding and a feeling of strangulation. Respite from coughing being again obtained, the exploration of the larynx was made with a bent polypus forceps, when the cent was detected in the larynx, the edge forwards, tightly enclosed by the swollen mucous membrane. On being seized, the forceps slipped, though moving it somewhat from its situation. At this moment the patient was well nigh strangled. After a short pause, in a further attempt, I succeeded in grasping the cent firmly and removing it, but not without considerable force. I, however, held it preferable to bring it down and extract it by the tracheal wound, notwithstanding the force required, rather than attempt to force it upwards by the glottis. Such a course being likely to lacerate the chordæ vocales glottis or mucous membrane, or even rupture the larynx. The patient, now finding himself relieved, was much rejoiced, and, looking at the offending body, exclaimed, that it was a costly and dearly-bought cent to him. A pledget of lint being laid in the lower angle of the wound, to favour the escape of secretions from the trachea, the edges were approximated and retained by adhesive plaster. He was placed on his side in bed, and water dressing applied; his cough continued teazing for some time, but gradually subsided; his respiration becoming more free, and his countenance calm. In the evening, his pulse becoming full, a free bleeding from the arm with strict antiphlogistic treatment was prescribed. On the following day, a further venesection was found necessary, the pulse being full and rapid; pain in the larynx, with sonorous breathing, the voice hoarse from the swollen condition of the mucous membrane; the blood was highly inflammatory. Ordered a continuance of the antiphlogistic treatment. The case from this forward progressed favourably; the voice improved, and some expectoration followed coughing. The wound suppurated kindly, and was closed by the end of the second week, when the patient left the hospital free of cough, and his voice restored to its former healthy and natural state.

This case is remarkable, and full of interest, and will long remain a solitary one in the annals of surgery. There could be no doubt (from the history and symptoms) that a foreign body had lodged in the larynx, still there was some hesitancy in admitting that so large a substance as an *American copper cent* could pass the rima glottidis and enter the cavity of the larynx. Considering, however, the laxity of the tissues in the aged, the volume and

force of a current of air in sudden inspiration during the act of laughing, and the great capacity of the air-passages in some persons, the case will no longer appear surprising. The entire absence of secretion in the trachea, or mucous râles in the bronchia, where a foreign body so long occupied the larynx, seemed strange, and can only be accounted for by its being of a smooth surface and firmly fixed in its situation, its presence was the less felt by the trachea. In addition to the abnormal artery traversing across the trachea, and which in a less careful dissection must have been wounded, both radials were found bifurcated high above the wrists.

CASE 6. Mary, infant daughter of Robert Hanna, of West Deer Township, Alleghany County, aged thirteen months, was, in May, 1857, brought to our hospital, a *roasted coffee bean* having lodged in the windpipe some twelve days before; the child was seen to convey it to the mouth, when it suddenly disappeared. She instantly began to cough with a croupy sound, but did not appear to strangle. The cough continued in spells; she became feverish and restless; a week later, on two occasions, while coughing, she was nearly suffocated. On examination of the chest, bronchial rales were audible over both lungs; the presence of the bean seemed to interfere but little with respiration; it could be distinctly heard to move up and down the trachea during the fits of coughing; the pulse was accelerated; sleep short and disturbed. On May 27, assisted by Drs. Henderson, McGrath, and Pillichody, I made an opening into the trachea to the extent of five-eighths of an inch, with little loss of blood; a violent fit of coughing ensued. On its subsiding, a female catheter was introduced by the wound through the larynx, exploring its cavity into the fauces, but no obstruction was detected. The efforts at coughing were very violent, during which the child was nearly strangled, became purplish, and ceased to breathe, the bean having momentarily obstructed the ingress of air. By promptly lifting the child up, turning its head downwards and slapping on its back, the foreign body became displaced and respiration restored. The edges of the wound being held apart with blunt hooks, during a fit of coughing the bean appeared in sight, was instantly seized and removed. Relief was immediate; the cough subsided; she took the breast with ease, and slept better. The voice remained for several days hoarse. The wound inflamed, and though carefully approximated, opened during the fits of coughing, and owing to the strumous constitution and the escape of milk through the opening during the act of nursing, the closing of the wound was tedious. Dentition also added its irritation and increased the vascular excitement, to allay which venesection, with local depletion by leeches applied to the head and throat, and other antiphlogistics, were had recourse to. By strips of adhesive plaster encircling the neck, the edges of the wound were kept in close apposition, and after three weeks were united; a week later the wound was cicatrized, the cough had disappeared, and recovery being complete, the patient was taken home.

CASE 7. John Adams, of Pittsburg, aged four and a half years, a healthy boy, was, while eating *sugared corn*, suddenly attacked with croupy cough and strangulation, which lasted, with short intermissions, for several hours. The parents and their friends felt certain that a corn had entered the windpipe, but a practitioner who was called in ridiculed the idea of anything

being able to enter the windpipe, and treated the case as a catarrh. Six weeks were spent in fruitless efforts to relieve the child by remedies for croup, catarrh, and bronchitis, the physician continually representing the case as free from danger, and quieting the apprehension of the parents. At length, tired of his services, I was requested to visit him, on the 20th of January, 1851. From the history of the case, the obstinately harassing croupy cough, the hectic fever, with night-sweats, loss of appetite, emaciation, rapid small pulse, quick respiration, profuse ropy expectoration, disturbed sleep, with the head raised by pillows, it was evident a foreign body occupied some portion of the bronchia. On examination I found entire absence of respiratory murmurs in the left lung, with dulness on percussion, while the right lung was normal. The head was bent forward and cannot be raised without causing pain in the trachea. The corn was lodged evidently in the left bronchus, and softening with the surrounding moisture lay impacted with little hope of its being dislodged. Hopeless as the case appeared, still no alternative was left to reach the offending body but by opening the trachea. The parents being apprised of the necessity as well as the uncertainty of the operation, in this particular instance, eagerly desired to have it performed, however small the chances of saving the child might be. Kindly assisted by Drs. Gazzam, Murdock, and McDonald, the trachea was opened; the bleeding was considerable. During the paroxysms of coughing and the struggles of the patient, the lips of the wound being held apart, an elastic sound was passed upwards through the larynx into the fauces. No obstruction being met, it was allowed to slide downward towards the left bronchus with the view of dislodging the corn; the body too was inverted, the back repeatedly slapped, but all efforts failed in dislodging and expelling the body. Convinced that it had become impacted in the bronchus by becoming swollen, we contented ourselves with keeping the windpipe open with a wire spring. Some relief was thus afforded the little sufferer, respiration became less hurried, pulse less frequent, and the cough less troublesome. The respite was, however, of short duration; the croupy cough continued, with profuse ropy expectoration, which soon became highly offensive. Emaciation and restlessness increased, the lips of the wound assumed a pale colour, and gaped. Diarrhœa set in, with ascites and general œdema, and death closed the scene three weeks after the performance of the operation. Anxious to verify our diagnosis, a post-mortem examination was readily obtained, twenty-four hours after death. On opening the chest, the right lung and pleura were found normal; on the left the pleura pulmonalis et costata were adherent throughout their entire extent. The lung was congested, enlarged, and the air-cells filled with depots of purulent matter. The pericardium was distended with serum; the bronchi were filled with ropy mucus; the larynx natural, but the trachea and left bronchus were inflamed. In the latter was found a red corn, softened, and firmly wedged in, completely shutting up the bronchus. The examination having fully verified the diagnosis, it next elicited our regret that science should have been so outraged by one of its votaries in dooming a healthy child to death, whom prompt surgical treatment would have restored to health.

We hope no apology is needed for laying before the professional reader the foregoing cases. The report of cases conveys much instruction; they are the landmarks for the young practitioner, which enable him to act with

promptness and confidence in cases of emergency, though individual experience be wanting.

Tracheotomy is, in general, a simple operation; the division of the skin, cellular tissue, and superficial fascia is easy enough. The reaching of the median line of the trachea between the muscles alone may require caution, as bleeding and struggling will obscure the field of operation. To miss this median line and cut the muscles is embarrassing to the young surgeon. Not much difficulty is met with in incising the trachea, yet occasionally the operation may become harassing to the surgeon from the struggles of the patient, the shortness of the neck, the deep situation of the trachea in children, the convulsive paroxysms of coughing and fits of strangulation which take place on the interior of the windpipe being exposed to the external air.

Temporary strangulation, or even death, may occur at the moment when success seemed certain, from the foreign body becoming impacted in the lower portion of the tube, completely arresting the ingress of air in such circumstances. Inversion of the body, with shaking and slapping on the back, or the speedy introduction of a sound or forceps down to the bifurcation, will be the most efficient means of relief.

The after-treatment of tracheotomy must be strictly antiphlogistic, free and repeated bleeding, general or local, or both, according to circumstances, to control inflammatory tendencies, and remove congestion of the mucous membrane of the air-passages. The administration of anæsthetic agents would be, if not improper, of very doubtful propriety in the cases under consideration, as tending to shut off from the lungs the necessary supply of oxygen, already too limited, by the presence of the foreign body. Moreover, the efforts of the patient are useful, in fact needed, to expel by coughing, or snore, the substance into the opening for its removal.

ART. VI.—*A New Method of Performing Tracheotomy, with two Illustrative Cases.* By J. H. BILL, Asst. Surg. U. S. A.

IT is acknowledged by operators that tracheotomy is sometimes one of the most difficult operations in surgery, taxing the coolness, skill, and knowledge of the surgeon to the utmost extent.

The parts involved lie so deeply, are so surrounded by important vessels, are so plentifully supplied with veins, are so mobile in themselves, that even supposing perfect docility on the part of a patient, the operation may be of very difficult execution. Moreover, in no case is it an operation that can be done hastily, and at the same time with safety; and yet circumstances often demand that it should be performed without a moment's delay.

We propose in this article to offer a method to the profession which we believe greatly reduces the danger of the operation, and certainly renders its rapid performance both safe and easy.

What are the dangers attendant on tracheotomy as an operation? They are two in number. The danger of opening a great vessel at the root of the neck, and the danger of hemorrhage into the trachea from wounded tracheal or thyroid veins.

The first of these dangers may be converted into a reality by an incautious downward or lateral extension of the incision, or owing to the unsteadiness of the trachea and the slipping and rolling of this under the point of the knife. The latter accident may arise from over anxiety to open the trachea before the hemorrhage from the thyroideal and other tissues has been checked.

Feeling the necessities of the case, and the difficulties and dangers attendant upon the operation, the writer, several years since, devised a modification of the old method, and he has, by two trials on the living subject, as well as by numerous repetitions of these on the cadaver, reason to be perfectly satisfied with the operation proposed.

Fig. 1.

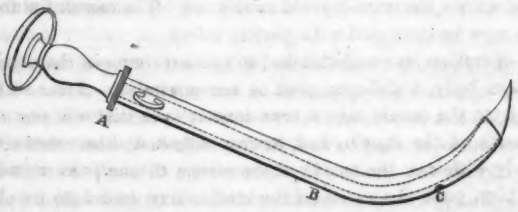

Fig. 1 represents the instrument employed of one-half the required size. It is, in fact, a trocar and canula of peculiar shape. The canula presents an elliptical section; the point of the trocar is shaped like the point of an ordinary curved bistoury, blunt on the back. The instrument is provided with rings at A, to serve as handles for manipulation. That portion of the rod of the trocar lying between B and C, is smaller than the rest, and has a watch-spring temper. There is a fenestra at C. The canula is silver, the trocar steel. Such is the instrument. The operation proposed is the following:—

Make an incision through the crico-thyroid membrane parallel to the crico-thyroid arteries. Having sheathed the spear point of the trocar within the canula by partly withdrawing the former from within the latter, pass the open mouth of the canula through the incision so made, and carry the instrument as far downwards as is considered safe or necessary, the convexity of course looking towards the œsophagus. When this point has been reached, depress the ring handles of the canula towards the patient's chin. By so doing the mouth of the canula is elevated, and also

with it the anterior wall of the trachea against which it has been pressing. The great vessels are now of necessity behind and to the outside of the ordinary line of incisions; and these can be in no danger whatever when we push the handle of the trocar into its place, and so protrude the knife edge through the canula, and through all the tissues lying in front of this. The whole instrument is now to be pushed on, until the mouth of the canula has made its way through the skin, and then the stilet being withdrawn the patient is allowed to breathe temporarily through the canula by means of the fenestra at c. If the operation was undertaken for the removal of a foreign body, we should now proceed regularly to work as in ordinary operations, making incisions through the skin and fascia of one or two inches in length, separating the muscle and securing all tissues each side of the intended incision through the trachea, by passing underneath them bent needles, and twisting a thread over these in the manner of the interrupted suture. All this done, introduce a probe-pointed bistoury into the mouth of the canula and the lip of the incisions, through skin, fascia, and the muscles being held asunder by blunt hooks, carry canula and bistoury carefully upward until three or four tracheal rings are divided. Then remove the bistoury from the canula and withdraw this latter from the wound within the crico-thyroid membrane. The search for the foreign body may now be instituted with perfect safety.

If the operation was undertaken for another purpose than the removal of a foreign body, a different plan is recommended. After withdrawing the stilet from the canula take a tracheotomy tube that will just fit tightly in the mouth of the canula, and, having adjusted them relatively in this way, slowly withdraw the mouth of the canula through the wound, and, at the same time, push the mouth of the tracheotomy tube into its place, until this latter is fairly lodged into the trachea. Then the canula may be withdrawn through the wound in the crico-thyroid membrane. This latter method would be, perhaps, a good operation in cases requiring it from drowning, etc.

Such is the operation we propose, and which we intend in future to perform. In conclusion, we will briefly detail two cases operated upon by this principle, *i. e.*, the fixation of the trachea and the elevating it away from the great vessels before making the incisions into it.

The first case was that of private Henry, Mounted Rifles, occurring at Fort Union, during the winter of 1858.

This man was found drunk by his orderly sergeant and temporarily confined in a privy; one hour afterwards, at 6 P. M., he was discovered to be dying. He was carried to the hospital, where the steward, by dint of pounding, etc., caused the poor fellow to disgorge a bit of meat which he had vomited into his trachea or rather his larynx. I arrived as soon as possible, and found the patient perfectly comatose and pulseless. The apnœa was complete. It was so dark that I could scarcely recognize the man's features, and candles were not at hand. Feeling that no delay was

allowable, I at once plunged a common lancet into the crico-thyroid membrane, and introduced a catheter, carried its point down to the part of the trachea I wished to open, and depressing its handle I thus elevated the point of the instrument, and with it the trachea. I then plunged the lancet into the mouth of the catheter and divided all the tissues upwards by simply withdrawing the catheter and with it the lancet. The man breathed his last before the operation commenced, although every method for his recovery, including Marshall Hall's, was tried for an hour and upwards, but in vain.

I may mention, incidentally, that after making the incision in the crico-thyroid membrane and withdrawing the lancet, I was puzzled for an instant by the protrusion through the wound of a singular looking substance of the nature of a tumour. In the darkness, I guessed that it was a bit of meat, and accordingly pushed it into the gullet with my little finger before introducing the catheter. The operation did not consume more than thirty seconds time, and the autopsy next day showed that the wound in the trachea was exactly in the mesial line, and that no vessel of any size had been cut. The parts involved are now in my possession. The hemorrhage was profuse, though not more so than might have been expected considering the congestion caused by the union of drunkenness, strangulation, and the residence for an hour in the stifling atmosphere of a privy. The autopsy revealed an enormously enlarged thymus gland, weighing 210 grains. The deceased suffered from secondary syphilis and all the glands of the neck were much enlarged.

The second case occurred at Fort Defiance, N. M., in the spring of 1860. A child of a camp follower, aged 5 years, possessing a neck and disposition peculiarly unfitted for tracheotomy, had inhaled a bit of a bean or a grain of corn. She was almost suffocated, and as there were no auscultatory signs of any foreign body in the bronchi or trachea, and as there was a singular whistling noise in the larynx, I diagnosed a foreign body in the ventricles of the latter. Much to the little patient's disgust an incision was made through the skin over the crico-thyroid membrane, this latter punctured and a grooved director carried down the trachea a short distance. By depressing the handle of the grooved director the point was raised, and along with the latter the trachea, which was thus carried away from the great vessels, and fixed. As haste was no object, I carefully by regular incisions divided skin, superficial and cervical fasciæ, then separated the muscles of the trachea, and held them asunder by means of small blunt hooks, to which fine chains were attached loaded with weights, and the latter having been thrown over the edge of the table kept the trachea well exposed. I thus obviated the necessity of an assistant, who was not to be obtained. Now came the difficulty of the operation; the child was angry and frightened, and spit in my face until I was nearly blind. First, the isthmus of the thyroid was secured by two twisted sutures, in the manner of Brainard; hemorrhage thus prevented, the trachea was now well lifted away from the great vessels, and although I was nearly blind as before stated, with a feeling of delightful security I pushed a knife through the thoroughly fixed trachea, and slit upwards two or three of its rings, simply by sliding the knife along the groove of the director. This latter was then withdrawn. I then bent the scoop of the director so that it resembled the Graefe aneurism needle, and passed it into the ventricle of the larynx. In doing so, I felt something give way or slip from under the instrument. It

proved to be a grain of corn or a bean, which the child evacuated per anum thirty-six hours after, so much altered as to be unrecognizable. A small portion of the husk of the same was brought away in the scoop of the director. It was lodged in the ventricle of the larynx, and was large enough to do much harm. The patient still breathed with great difficulty from the tumefaction of the mucous membrane, and as a precautionary measure it was thought best to keep the wound open for twenty-four hours. Small doses of calomel and tartar emetic were given every two hours, the trachea was moistened every few minutes with a few drops of glycerin and fumigations of acetic acid employed. In about thirty-six hours, finding that the patient was able to breathe through the larynx, I closed the wound in the trachea by some fine wire suture, and left the patient, directing quiet and confinement for a few days. In three weeks the wound was healed, excepting a small fistulous orifice in the trachea. By frequent applications of nitrate of silver this closed also. And the patient is now, three months after the operation, quite well.

We deem that enough has been said to show

1st. That the method proposed is far safer than the old plan; and,

2d. That it may be performed more rapidly and easily.

ART. VII.—*Case of Primary Pyæmia.* By JAMES BLAKE, M.D., F.R.C.S. San Francisco, California.

THE occurrence of cases of primary pyæmia is so rare, that I think the following instance of a most acute form of the disease is worth publishing. In most systematic works on medicine, the existence of such a form of disease is not noticed. Wunderlich, however, in the *Archiv. für physiologische Heilkunde*, for 1857, relates five cases that he had met with in his extensive practice. In only one instance, however, was the disease so rapidly fatal as in the following case, and even in that it was preceded by circumstances which were much more calculated to give rise to a vitiated state of the blood. As far as my knowledge of medical literature enables me to judge, the accompanying case is unique in the apparent absence of all those antecedents which have generally been regarded as essential to the development of the disease.

G. L., æt. 14, a strong, healthy boy; has always enjoyed good health, having even escaped up to the present time all the infantile, eruptive fevers and hooping cough, although frequently exposed to them. On July 23d, whilst playing, and on the ground, he received a kick in the thigh from one of his school-fellows. The kick caused him some pain, so that he sat down for about half an hour. He did not complain on returning home, and the next day he went to school as usual, walking a considerable distance; but on coming home in the evening he was lame, and complained

of his leg hurting him. At night he was rather restless and feverish. The next morning (the 25th), the leg was more painful, the thigh being swollen and red. There was a decided chill about 9 A. M., followed by fever and loss of appetite. The pain in the leg, swelling, and redness increased towards evening, and all night he was in a high fever, and frequently delirious.

I saw him for the first time on the morning of the 26th. I found the right thigh considerably swollen and red, the swelling extending from a little below the groin down to the knee, but most marked at about the junction of the upper and middle third. There was some hardness, and a feeling of elastic tension. Handling the part caused considerable pain, and there was great tenderness on pressure over a spot on the outside of the thigh, about three inches below the trochanter, the place where it was stated that he had been kicked. There was however no ecchymosis, nor anything except the increased pain, to indicate that this was the seat of the original injury. The movements of the hip could be performed passively without pain, nor was there any symptom of injury about the joint. The child complained only of violent headache and pain in the thigh. There was great thirst, and complete anorexia. The bowels had been freely opened by a saline purge. The skin was hot and dry; tongue white; pulse 120, full.

The diagnosis was, that there was inflammation going on beneath the fascia lata. I proposed an incision on the outside of the thigh, more with the view of relieving tension and preventing infiltration than in the expectation that pus had already formed. The parents wishing a second opinion, I met Dr. Dupuytren in consultation on the case in the afternoon, and his views coinciding with mine, an incision two and a half inches long was made down to the bone. Nothing escaped but some blood and serum. Tincture of veratrum viride and spirit mindereri was ordered to allay the fever, and morphia in full doses to procure sleep.

July 27. The child has passed a restless night, except when stupefied at short intervals by the morphia, of which as much as two grains have been taken. When awake he has been wildly delirious. Skin hot; pulse 110, full; great thirst; tongue coated white. Features express anxiety; skin of a dull, brownish-yellow colour. The thigh is rather more swollen, and pain is complained of in each lower extremity. Both ankles are rather swollen and look red. Small collections of pus are observed on each lower extremity. They seem to be directly beneath the epidermis, and vary in size from a pin's head to a pea; some are umbilicated. There are about twenty on each limb, situated mostly below the knee. In fact, there were none on the injured thigh, and but two or three on the other. None were found on the arms, face, or trunk.

In the evening the pulse was down to 90; some perspiration had taken place, but the patient was delirious nearly the whole time. Some egg and

brandy was ordered, and tinct. ferri sesquichlor. in twenty drop doses every three hours. One-third grain morphia was to be taken every hour until he slept. It was now evident that the symptoms were not owing to inflammation or abscess beneath the fascia lata, and as the patient rapidly became worse, the only conclusion that we could arrive at was, that it was a case of blood poisoning. The case was seen by Dr. Toland and two other physicians, and whilst the symptoms now clearly pointed out the nature of the disease, yet we could see no apparent cause for its proving so rapidly fatal. The patient died on the morning of the 30th, or five days after the appearance of the first symptoms.

Assisted by Dr. Staub, I made a partial examination of the body twelve hours after death, as we were only permitted to open the thorax and abdomen. On opening the thorax, the lungs collapsed but partially, as they were pretty generally affected by a sero-sanguinolent engorgement. On the surface of the lungs, and immediately beneath the pleura, were a number of small abscesses, and on cutting into them, small collections of pus were found throughout the whole of the pulmonary tissue. These abscesses were small, the largest not being larger than a small bean. On opening the pericardium it was found to contain about three ounces of serum, and some shreds of detached fibrin. The surface of the heart, as well as of the free surface of the pericardium, was rough. At the base of the heart, near the origin of the aorta, there was an appearance of ecchymosis in the muscular tissue, and on cutting into it an ill-defined purulent collection was found almost the size of a quarter of a dollar. The right cavities contained some decolorized fibrinous clots, which extended some distance into the pulmonary artery. The blood in the left cavities was dark and fluid, but some of it that was preserved for examination coagulated after a few hours. The lining membrane was healthy. The liver and spleen appeared normal; a careful examination failed to detect any purulent deposits in either of these organs, nor was the spleen at all softened. The kidneys presented on their surface a number of small collections of pus, analogous to those seen on the skin, and situated immediately under the capsule. There were about a dozen of these on the surface of each kidney, some of which were surrounded by an ecchymosed border. The substance of the kidneys was darker than natural, particularly the right, but no purulent collections were found except on the surface. The iliac veins of each side, and the lower part of the cava, were examined. There was no clot in either; but the lining membrane of the right iliac was not so smooth as that of the opposite side. A microscopical examination of the blood, taken from the left side of the heart, showed the corpuscles to be nearly all altered in shape; hardly one could be found with the natural, clear contour; they were mostly irregular, presenting generally a stellate form. The proportion of colourless corpuscles was rather larger than natural, and they were less transparent, presenting the appearance between normal colourless cor-

puscles, and pus globules. The microscope showed the urinary tubes loaded with pus globules and epithelium.

Such is the history of the case. There can be no doubt but that death was caused by pyæmia; but the rapidity of the disease in a previously healthy child, and the slightness of the apparent cause, are points which make it interesting. The child's general health was excellent; it had no illness for years, having escaped the eruptive fevers, and other children's diseases, although frequently exposed to them. And yet, under these circumstances, a slight bruise, so slight as hardly to leave a mark on the skin, sufficed to develop a disease which, in four days, had so far affected the system that pus was deposited on the internal organs and on the skin. A bruise was received on the 23d, at noon; no symptoms of importance showed themselves until the morning of the 25th, when there was a chill; and on the morning of the 27th, or forty-eight hours after the chill, purulent deposits were formed beneath the skin, and most likely on the internal organs. Death took place early on the 30th, or less than five days after the appearance of the first well marked symptoms. A most careful inquiry failed to connect the disease with any extraneous source of poisoning. The only antecedent that might be thought to have been connected with the appearance of the disease was, that two months previous to his illness the child had ridden into the water a horse that was said to have had sores on its body; but this was entirely accidental, as the child was not accustomed to be with horses. The eruption on the skin was analogous to that seen in cases of farcy; but the absence of any affection of the mucous membranes of the nose or throat—the length of time that had elapsed since exposure to the possible source of contagion—and the apparent connection of the disease with a local injury, lead to the conclusion that the case was one of primary pyæmia.

NOTE.—The fact of the child never having had any of the eruptive fevers of childhood might, perhaps, have acted as a predisposing cause for the disease.

ART. VIII.—*Ligation of the Subclavian of a Negro. Death of the Patient. With some Inquiries as to its Cause.* By RUFUS KING BROWNE, M. D., late Brigade Surgeon U. S. V., Surgeon in chief U. S. General Hospital, New Orleans.

A CASE of ligation of the subclavian in this hospital was recently reported by Dr. J. B. Muse, of this hospital. The patient afterwards died. At the time the report was read to me, I had no opportunity to express any opinion on the exciting cause of the death. No untoward or peculiar incidents up to the occurrence of the febrile rigor were consequent on the operation.

I had often performed it on the cadaver. I have not since been successful in imagining any cause of death but the rigor, though it is supposable that the operation itself without such coincidence may terminate fatally, as that did, and that without symptoms of gravity plainly attributable to it. The patient was very eligibly situated in Hygienic particulars for recovery, and was visited several times a day by myself and others. The patient never complained of aught but a slight soreness of the operated part. He was cautiously dieted and well attended by his wife and friends. The wound was seen on each visit several times a day by myself and dressed by my own hands. The suspicion of empyema is precluded by the absence of any indication of it in the autopsy, or in the course of the case. He occupied a room by himself, well lighted and airy. But one suspicion ever crossed my mind that my injunctions had been disregarded; this was that he might have copulated with his wife, who watched him one night, but this was positively denied; and this suspicion was precluded by the fact that in such cases the result, if any, would have been immediate or consecutive on the act. The death did not occur until late in the forenoon.

All the noticeable incidents antecedent to the death are already related. The first of them was the faintness of the patient; when risen to use the chamber, the attendants noticed a sudden faintness, weakness, not to syncope. This incident was the first of the closing scenes of his life. It was immediately reported to me—only two rooms separating me from the patient's bed—and one of the three persons with him at the time, came to me *at once*. The rigor came on immediately after. This faintness indicated a perturbed or labored action of the heart, which was found to be the fact; when the rigor set in, the hand of the operated side at once appeared *shrivelled*. He complained of nothing but the weakness. Soon after the respiratory movements were diminished in degree, though orderly, stimulants were prescribed, and while they were being taken, a renewed examination was made of the cardiac movement; it was regular in measure, but *labored*. The heart beat was not circumscribed to the apex, but the whole ventricle was urged against the precordial space; the pulse was but 84. To the last he complained of nothing but the heart "keeping a fooling." There was no other sense of distress. Under the influence of the stimulants the symptoms of rigor were dispelled. The sweat on the forehead still continued, though remarkably abated, but the skin was nowhere cold. This condition of the heart continued until death. There was no evident engorgement or excitement of the great vessels of the neck. Was the rigor strictly febrile, or was it a consequence of the operation, and due to that "constitutional irritation," so well described by Tyrrell of London, in 1824, who attributed to it many deaths not otherwise accounted for? Many times in cases with or without serious organic lesion, when we have been at a loss to account for death, this hypothesis seemed reasonable. The location of the hospital is highly malarious; and was the irrita-

tion inaugurated by the action of the miasmatic air during the operation, on the exposed tissue? It set in on the seventh day after the operation. The wound was found peculiarly healthy and free from suppuration, but far from dry. Would this have been so were it the seat of an infectious or epidemic influence; and is a miasmatic atmosphere a source of disaster in the existence of wounds of the body?

Such are the questions it would be a great progress in pathology to answer; or was the increase of blood by *so much as its circuit was diminished in extent* too great for the normal action of the heart? The patient was very full blooded and well nourished. This supposition would attribute the fatality *wholly* to the consequence of the operation, and this would hardly take the *choice* of supposition; for shall we not rather suppose that as in the febrile rigor there is always comparative interior congestion, a relative heaping or arrest of their contents nearest the centre of the circulatory system, that the occurrence of the rigor was the *co-efficient* cause of the laboring condition of the heart. There were no brain symptoms, and although inspiration was *abbreviated*, the respiratory movement was orderly and unintermitted.

To the last, the arterial action was not greatly accelerated, nor the cardiac movement increased, but rather oppressed, as though the blood forced out by each *antecedent* stroke had not been hurried away, and *that* because of the relative increase of its amount in the same calibre to contain it. This is easily apprehended, or what was first shown experimentally by myself, a congestion of the vascular part of the walls and thickness of the heart itself.

It would perhaps bring us nearer the truth to ascertain exactly the difference between the negro and Caucasian constitution. The patient was a negro. Their blood is relatively richer in carbonic acid, and other elements which dispose to apathy. In all diseases which involve principally the arterial system and its contents they are disposed to stupor. The grade of nervous action is relatively low. In them with pneumonia, the congested condition of the pulmonary capillaries is always deeper, and since the relief of congestion is dependent on nervous power and co-efficiency, it seems not improbable that in this case these elements—not so in the case of the white—contribute to such a fatal termination.

These latter suppositions are rather favoured by the fact that the stimulating measures caused an *immediate* improvement in the sinking condition, so great that we no longer despaired of the patient's life. Our alarm was greatly diminished, and death, which at first seemed imminent, did not take place for four hours afterwards. Again, the chilly state of the system supervened, and the patient died without a sign of distress; no symptoms thought to be of poisoning were remarked, and no sign of inflammatory or other malignant action was found in any of the vessels. Indeed there had been no symptoms to occasion a suspicion of such. The tumour was filled

with a dark but not firm clot. Would it have been better surgery to allow the aneurism to take its course, or to have endeavoured the complete suppression of the axillary artery by some mechanical contrivance? If we admit the doctrine of "constitutional irritation," to what was it attributable—to the wound, or to the general condition of the system in a malarious atmosphere? I briefly recapitulate the antecedents of the operation, that each reader may judge for himself whether they are suitable to this doctrine.

Five months before, "William" trying to escape to Needham on the entrance of the Union forces, was assailed by his master with a loaded pistol, from which four shots were fired. Two struck him on the deltoid part of the arm, nearly on a level, when the arm is dependent, with the middle of the axillary space. These felled him to the ground. He was raised and taken home. He "had never been sick," but "for a week after receiving these shots he had a fever." A physician washed the blood away and *poulticed*. After that week, the pain diminished in his shoulder, and he continued to "*feel the misery in his hand and elbow.*" Still further on and up to his visit to me, he complained of a want of power in his arm, and then it presented much diminished sensibility and power of motion, being in a dependent posture. The patient received no further treatment until that period. Then I supposed that the tumour in the axillary space was the seat of the ball. Being pressed with multitudinous avocations, I dismissed him to come again. He did so weeks afterwards. The tumour was now longer, I thought, than when first seen. It was dense, and though resilient, presented no signs of an inclosure of pus, or other morbid product of inflammatory or irritative action. At first, then, I did not think it an aneurism, but still supposed it probable that it was the seat of the ball. The increasing lameness of the arm, and its comparative useless state, counselled some operative interference. I very cautiously cut through the skin upon the tumour. Again I carefully felt, and now detected *obscurely*, signs of pulsation. I desisted at once. I immediately covered the incision through the skin, and told him to call when it was healed. I *suppose* I did not then *listen* stethoscopically for the signs of aneurism. If I did not, I can only account for the omission by supposing some sudden and imperious demand of hospital duty, constantly occurring, drew me away from the spot, or what is still more probable, and decidedly believed to have been the case by my assistants—that he was told to wait until the stethoscope was brought, that the examination might be more private, it having been made in the most public business room of the hospital. It is most probable this was the case, but if so, like all of his race, if so told, *after* the words were spoken all remembrance of them passed away. I saw him next about two weeks after, while he was on a visit to his wife; and then my first act was in accordance with the suspicion of aneurism. I at once listened with the stethoscope, and was decided. My assistants present, Drs. Muse and Clary, did the same and agreed. He was then at once told the

nature and danger of the case, without an operation, and the gravity with it. That he appreciated either clearly, I cannot say. He only asked if it would *hurt* him, and was told that he would not feel the operation. I at once prepared to perform it. The table was made ready, and the patient placed upon it. I had but two assistants, those named above. The chloroform was administered by Dr. Muse. Shortly after coming under its influence the respiratory movement intermitted. Long accustomed to this result in animals, it was withheld. For the time being, the suspension was complete, but there was no confusion. But a few seconds had intervened since he was struggling under control, and the suspension of the respiratory movement was so abrupt, that the administrator with his eyes on the patient's face, his hand on the radial artery, did not notice it as soon as myself. His tongue was at once drawn forward with the forceps in my hand, and held by Dr. Clary. I alternately depressed and upheld at the sides his chest. With my left hand I felt for the heart beat, and discerned it much diminished and of slow rate. The action on the chest was continued, and the suspension of the respiratory movement immediately ended.

The pure chloroform was now withheld, and the patient made to inhale a mixture of that anæsthetic and sulphuric ether. With this, he soon after—some vigorous struggling attesting the complete return of his bodily powers—again became quiescent. The operation was now performed. He was but lightly anæsthetized by my direction, and on the first cut squirmed, struggled, and vigorously mumbled. Being held comparatively still, I continued. When about half through the operation he again struggled, but an increase of the quantity of the anæsthetic again made him quiescent. Except the incision through the skin, and the division of the muscular tissue, all the tissue gone through was divided by the *forceps*. No bloodvessels of the least calibre were cut. The vessel was at least once and a half or twice as deep as I ever saw it in any cadaver, on which I had previously performed the operation.

The third division of the artery was found out of its usual relation; it was however soon found and tied; my assistants having assured *themselves*, at my suggestion, that it alone was ligated. The extreme depth of the wound was owing to the very remarkable thickness of the clavicle, and the more extreme bulge of the ribs; the patient being one of those barrel chested negroes sometimes met with.

There was no ground for the suspicion that the least portion of any other tissue had been included in the ligation, and the autopsy showed all but the artery apart from the ligation. That wounds in a malarious district are more dangerous, or turn to a greater ratio of fatality among the wounded, would be indeed a fact of startling gravity. In seeking an explanation of such points, caution cannot be excessive; otherwise it is building an edifice which does not suit the site. It has been unexpectedly observed that the fatality of wounds in the fever districts of the Virginia peninsula was very great.

Was the inordinate depth of the wound a condition of fatality? This might readily be the case unknown as yet to us, a hitherto unconsidered danger? I need hardly multiply questions I am unable to answer.

There is, however, one consideration which we have long believed to be important, and which was strengthened by this death. If the obliteration of an artery and thereby the cure of aneurism by pressure be the best known mode, why should we not deem it better than ligation to imitate it as near as possible, where the ligation is impracticable. How far the *ligation* itself contributes to constitutional disturbance we do not know. Several years since I conceived the idea that pressure on the artery when exposed, by a delicate slip of metal, bent upon itself over the artery, and which merely flattened it, was a better proceeding than ligation. Some experiments made on the arteries of animals proved it to be correct. The same is the case in all pressure where it is convenient, and I regret that I did not find the first convenient in this instance.

ART. IX.—*Dislocation of the Left Shoulder reduced by Manipulation, without the Employment of Anæsthetics or other Remedies.* By CHARLES H. PILE, M. D., Assist. Surg. U. S. Navy.

ON the morning of October 9th, I was called to see a sailor suffering from an injury of the left shoulder, produced by a fall on deck. On examining the injured part, I discovered a luxation of the humerus forward, the head of the bone forming a prominent tumour under the belly of the pectoralis major muscle; the acromion process of the scapula was prominent and well defined. I immediately proceeded to reduction. I seated the patient on a low stool, flexed the forearm on the arm, elevated the arm at an angle of 45° with the body, then rotating the head of the humerus by turning the arm backwards as far as possible, and afterwards suddenly reversing the motion on carrying the injured extremity across the chest towards the sound side, when the head of the bone slipped into the glenoid cavity with a slight noise. This process for reducing dislocations of the shoulder was taught me by my old friend and preceptor, Prof. H. H. Smith, of Philadelphia.

The advantage it possesses over the old method is very manifest, since instead of requiring a vast expense of muscular power on the part of the surgeon, it is nearly all transferred to the muscles of the patient. In flexing the forearm on the arm, the flexor muscles are relaxed; by elevating and rotating the head of the humerus, it is dislodged from the neck of the scapula, and gradually forced upon the edge of the glenoid cavity, when the supra-spinatus, deltoid, and infra-spinatus muscles quickly draw it into its proper place.

ART. X.—*Hemorrhage following the Extraction of a Tooth.* By GEORGE S. D. ANDERSON, M. D., of Rapides, Louisiana.

THE following case of hemorrhage consequent on the extraction of a tooth came under our observation some time since, and we report it because it may be considered as possessing some points of interest.

S—— S——, a shingle maker and house roofer by trade—about 50 years of age, of the bilious-sanguine temperament, light hair, very light hazel eyes, large, well formed and muscular, has been and is a man of dissipated habits, but is free from hereditary predisposition to disease—had the right upper cuspid tooth extracted by us at about 12 M. of Wednesday, the 19th of December, 1855. After extracting the tooth, we told him to put some common salt into the cavity whence the tooth was extracted. He did so, and resumed his labour, riving boards. He continued to work till night, lifting frequently heavy bolts of timber. The hemorrhage ceased, or nearly so, till about 6 P. M., when it recommenced and bled freely till about 5 next morning, when we were summoned in haste to see him. We found a good many coagula of blood on the hearth, and on the floor of his room. He had fallen into a doze a short time before our arrival, and was sleeping when we entered the room. A coagulum of blood was hanging out of his mouth, reaching to his pillow. He soon awoke, when the clotted blood was removed from his mouth. The hemorrhage was still going on, with no disposition to stop. The bystanders stood somewhat amazed, being apprehensive of a fatal result.

Such was the case before me. I could not ascertain with any degree of certainty the quantity of blood that had been lost, but enough to cause faintness whenever he rose to the sitting posture. Under these circumstances what was to be done to arrest the hemorrhage? Mr. S—— was not of the hemorrhagic diathesis, and there was no want of coagulability in the blood, as evidenced by the numerous coagula lying on the hearth before me. It was, then, clearly evident that compression over the open cavity for a sufficient length of time for the blood in it to coagulate would arrest effectually the hemorrhage. We therefore put our finger over it till we could get some sole-leather, from the flesh side of which we had enough scraped to form a plug. This we put into the alveolar cavity whence the tooth had been drawn, and continued to make pressure with our finger for near two hours, and thus succeeded in arresting the hemorrhage.

The pressure alone might have sufficed in this case, and no doubt would, but as the leather possesses astringent properties from the tannin used in tanning it, it is very clear that it better answers the indication than almost anything else. Besides, it is an animal substance, and is not likely to create inflammation, as lint or other vegetable substance would do. Cobweb, fur, and other things have been used for the purpose of arresting hemor-

rhages from incised and other wounds by the vulgar, and even by physicians in some instances, under the belief that they have some specific effect in arresting hemorrhage. This is an erroneous opinion, as they are possessed of no astringent properties whatever. By adhering to the edges of the wound, they interrupt the flow of blood by forming a coagulum, which closes the orifice and stops the bleeding. Cobweb had been used in the case now reported, and if pressure had been made a sufficient length of time it would have answered every desirable purpose. But the substance used by us in this instance (and it was originally suggested by another), answers better, as it combines in its action astringent properties. We certainly believe that this would be the best substance that could be used in those cases of hemorrhage following the extraction of teeth in persons in whom the hemorrhagic diathesis exists, in which there is manifest want of coagulability in the blood. Dipped in a saturated solution of tannin, nothing, it appears to us, would answer a better purpose. Or, the cavity might first be injected with the solution of tannin.[1]

ART. XI.—*Premature Delivery, with very rare Presentation of the Fœtus.* By W. T. OWEN, M. D., of Louisville, Ky.

I WAS called to see Mrs. J., of Louisville, aged 15 years, primipara, in labour after a seven and a half months' pregnancy, on the 24th of May, at 2 o'clock A. M., and found her with strong, frequently recurring labour-pains, induced by a large dose of castor oil, which she stated that she had taken on the previous evening. Os uteri slightly open. Prescribed sulph. morphiæ gr. ss every half hour, or *pro re nata*. Two doses secured perfect tranquillity through the remainder of the night, and for the next twenty-four hours, when I was called again, to find her decidedly in labour, and the os uteri dilated to the size of a half sovereign or over; the lips of the os rigid, membranes tense, uniform to the sense of touch. Unable to distinguish the presentation. Maintained the integrity of the membranes until the anterior lip of the neck of the uterus would easily pass up behind the os pubis and remain, and supposed the nates to be the presenting part; then ruptured the membranes, and a most inordinate flow of liquor amnii passed off instantly. Upon immediate examination, I found the right side of the fœtus presenting; the anterior surface of the child corresponding to the anterior aspect of the mother; the right hip of the child in the left iliac region, the right shoulder in the right iliac

[1] [We must take advantage of this opportunity to call attention to the efficacy of the persulphate of iron (Monsel's salt) as an hæmostatic. It is undoubtedly the most efficient one we possess, and when procurable, it should not be overlooked.—ED.]

space, equidistant from the os uteri proper. The next pain was very severe, forcing the child down deep into the pelvis, with no prospect of delivery in said position. I demanded a consultation with Prof. Miller. However, I placed her immediately under the influence of chloroform carried to anæsthesia, and the uterus, which hitherto had strongly contracted, and was now moulded to the shape of its contents, relaxed, and enabled me to push up the superior extremity sufficiently to bring down by its next pain the nates; and with the second pain the breech fairly engaged within the os, with a foot and leg flexed on the thigh. I delivered her very shortly after of a living male child. The head was sufficiently long in its detention to cut off the placental circulation, which I counterbalanced in my efforts at extraction—my finger in the child's mouth enabling it to take four inspirations; intra-uterine respiration.

Having given a concise account of the prominent features of the case, I desire to make a few observations by way of synopsis.

1st. The extreme youth of my patient—scarce fifteen years; the vaginal canal, os externum smaller than any accouchée I have ever known. 2d. The propriety of permitting the membranes to remain entire, if possible, until full dilatation of the os takes place. This I deem of the first importance in vertex presentations, and *à fortiori* in nates and other preternatural presentations. 3d. The value of chloroform—in this case most signal. Why? It produced relaxation of the uterus sufficient to enable me to convert a most unusual and dangerous position into a comparatively safe and not unusual one. At the time of the rupture of the membranes, when the fact was clearly before me that I had a side presentation, and I demanded a consultation, my mind was clearly made up that version was unattainable on account of the extreme smallness of the vaginal canal and os externum—that my only chance was embryotomy, and its feasibility for the same cause was a question. I succeeded without other aid. 4th. The inspiration of four full breaths, taken by the child while its face was impacted in the hollow of the sacrum; intra-uterine respiration. 5th. A living child, well formed, uninjured.

ART. XII.—*Case of Placenta Prævia.* By WM. T. TAYLOR, M. D.

ABOUT the beginning of September, 1862, I was engaged to attend Mrs. Q., residing in the 20th ward, during her labour, which was to occur in October following.

For a few months previous, she had been troubled with frequent, but slight uterine hemorrhages, which being attended with no pain, caused her little uneasiness, this being her second gestation.

On the 16th of September, the flow was very profuse, and being somewhat alarmed she sent for me; it however had ceased before my arrival.

Suspecting it to be a case of placenta prævia, yet requiring no interference at that time, I requested her to remain quiet for a few days, and avoid any exertion.

There was no recurrence of the hemorrhage until September 26th, when it came on very profusely, accompanied with some pain.

On examination per vaginam, the os uteri was dilated to the diameter of an inch, and within the neck covering the os completely was the placenta, bleeding freely with every pain; indeed the hemorrhage since morning had been quite alarming. Having tamponed the vagina I waited patiently for an half hour, when the pains being quite severe and very frequent the tampon was removed. The dilatation had increased considerably; again the tampon was introduced and an hour was allowed to pass; when the pains being very severe, and occurring more frequently, accompanied also with some discharge of blood, in consequence of the plug not being accurately applied, it was again removed. The os uteri was found to be well dilated, and completely covered by the placenta.

Having gradually passed my hand between it and the posterior lip of the uterus, I detached a portion of it, and discovered the membranes above; on rupturing them the hand and foot of a small child presented. The mother was quite exhausted by the hemorrhage, and a draught of brandy and water was given to her, when I proceeded to deliver her by bringing down the feet and body; the arms and head were extracted with some little delay.

The child appeared dead; but as there was some pulsation in the cord, and a portion of the placenta still adhered to the uterus, by rolling it gently from side to side (as Marshall Hall suggests to imitate respiration) for a few minutes, it began to breathe, and very soon manifested its vitality by loud cries.

When it had acquired sufficient strength, and a good degree of warmth, I tied the cord and removed the placenta. The womb contracted firmly; the after-pains were very slight. The mother made a rapid recovery, and her babe is now quite vigorous and large. Its life is probably owing to the circumstance that the placenta remained partially attached to the uterus until after its delivery, thus keeping up the connection with its parent until respiration was established.

December 2d, 1862.

ART. XIII. *Case of Injury of the Neck.* By REDFERN DAVIES, M. D., of Birmingham, England, now acting Assistant Surgeon U. S. A. (Brought before the Brodie Med. Chirur. So., Frederick City, Md.)

LEVERETT EVANS, aged 22 years, of small stature, and feeble build, was wounded at the battle of Antietam, September 17th, by a bullet entering

(his mouth being open) about the middle of the left anterior pillar of the fauces and issuing at the back of the neck, two inches from the spinous process of the second cervical vertebra on the left side.

A probe passed freely through the two apertures, grating against bone in its course.

He stated that he had lost much blood, producing faintness for several hours after the receipt of the injury. Since, however, having been a patient in this Hospital he has done well, and as usual was walking about the ward keeping his head as immovable as he could up to the morning of the 31st of October.

When while lying down on his bed and without any known cause hemorrhage of a "bright red colour" occurred to the amount of "about one wineglass full;" this bleeding issued from both apertures, and continued but for a few minutes, so that when I was in attendance upon him there was only some clotted blood to be seen in his mouth and on the back of his neck.

Another hemorrhage occurred in the course of two days, when "about a teaspoonful" of blood was lost.

Both apertures as well as discharge from the wound continued very good, and his general condition, though feeble, was fair.

On November 13th, shortly after eating his breakfast, when he appeared as usual, his mouth was observed to be drawn towards the right side, facial expression on the left side was gone, and on attempting to whistle his breath escaped at the left corner of his mouth. In an hour or so he began to mutter incoherently and deliriously, and died next day at 6 A. M.

Post-mortem six hours after death, Nov. 14.

Examination of parts involved in this injury showed: a sloughing passage in the bullet track, into which was forced, for a distance of an inch, the last molar tooth; the adjacent soft parts were healthy. Upon injecting the common carotid and vertebral arteries on both sides, the injection passed readily and well in all save in the left common carotid artery where its progress was arrested firmly after passing for a distance of about two inches; here its termination was covered in by an organized *cul-de-sac*, its distal termination as also its branches could not be found.

Ligamentous union and cartilage between the bodies of the first and second vertebræ were gone, their opposing surfaces being roughened.

From the foregoing facts, I am induced to believe that the internal carotid artery was laid open by the bullet which inflicted the injury; from the consequent loss of blood which ensued, faintness was induced. That while in this condition, a sufficiently strong coagulum was produced to prevent any further escape of blood; and that by the process attendant upon the prolonged suppuration (45 days) the remainder of the artery was disintegrated and passed away in the discharges.

The succeeding hemorrhages were caused by minute openings into branches of the external carotid artery, which were spontaneously arrested as they spontaneously arose.

TRANSACTIONS OF SOCIETIES.

ART. XIV.—*Summary of the Transactions of the College of Physicians of Philadelphia.*

1861. *Sept.* 4.* *Intra-uterine Hydrocephalus; Breech Presentation; Craniotomy; Recovery of Mother.*—Dr. CORSE related the following case.

Hydrocephalus, occurring during intra-uterine life, is generally of much less interest than when it occurs after birth. It is almost, if indeed not always, dependent upon some malformation of the cranial contents, which would properly place it within the sphere of teratology. Such occurrences are exceedingly rare. Their chief interest is to the obstetrician, as they very generally dangerously complicate labour, and render the operation of craniotomy necessary. This is the case when in labour some part of the head presents, but the difficulty and danger are increased if the breech comes down, as in the present instance.

Mrs. S. J., after having given birth to two fine perfectly formed children, who are now living and healthy, was taken in labour with her third child on Thursday morning, about 5 o'clock. The attending physician was sent for, and arrived about 9 A. M. The symptoms not being urgent, he left her and returned several times through the day. About 5 P. M. the body of the infant was delivered, but the head was retained in spite of his efforts to deliver it. The real nature of the case was as yet unknown, and the cause of the delay was supposed to be absence of uterine contractions. About 8 o'clock P. M. a neighbouring physician was called, who attempted the use of forceps. After fruitless efforts a third was sent for, who, upon examination, proposed that I should be joined to the consultation.

Much time had elapsed in sending messages to and fro, and it was 4 o'clock next morning before I got the message. I was soon by the patient, and found the child was in the fifth position of the breech. Extension had taken place, and the chin was resting on the brim of the pelvis, at the right acetabulum. I succeeded in bringing it down and rotating the head so as to bring the occiput to the acetabulum position. The long forceps were then applied, and during this process it was discovered that the head was of enormous size. Efforts were made to diminish it by compression; but, this being impossible, craniotomy was agreed upon. The head being above the superior strait, the shoulders of the child completely occupied the maternal passage, and presented an obstacle to operating; it was then determined to remove the body by amputation at the neck. The head being firmly secured in the blades of the forceps, and held by an assistant, the neck was severed. Sufficient space was now allowed. The operation consisted in making an opening through the soft parts under the chin, and through

* This case was unavoidably omitted in the last number of Transactions of the College.

the basilar process of the occipital bone into the cavity of the cranium; by this means a considerable part of the contents of the cranium were removed. Compression at this time by means of the forceps caused the cranium to collapse, and moderate traction delivered the head. The after-birth was removed by manual aid.

The patient had become exceedingly depressed, partly by the unfavourable prognostications of her numerous female friends, and partly by the long continuance of the labour. She soon, however, reacted, and got well almost without an unpleasant symptom.

1862. *May* 7. Dr. HUNT reported the following

Remarkable Case of the Co-existence of Tetanus and Paralysis.—R. C., a boy aged 16, was admitted into the Episcopal Hospital on the 12th of April, 1862. He had been injured in a rope factory by a machine which I personally inspected afterwards. It is a large wheel, some twelve feet in diameter, and eighteen inches broad at the circumference. The outer surface is studded very thickly with polished iron spikes, three and a half inches long, very sharp at the points, and about one-fourth of an inch thick at the base. In fact it is an immense circular comb, revolved by steam, and used for the purpose of disentangling and layering hemp.

While revolving, the machine requires a man and an adept to attend it; but in this case the proper personage was temporarily absent, and the boy, full of ambition, undertook the duty. He was caught, and after being torn by the points of the spikes, was fairly impaled by three of them entering his cranium. Luckily, some one near threw off the belt, and the wheel stopped, but so firmly was the boy fixed, that it took two men, one to support the body and the other to insert his fingers between the spikes, to draw him off. The person who acted in the latter capacity told me that the boy was perfectly conscious; did not think he was much hurt, and wished to walk home or to the hospital. His condition on admission was as follows: There were some eight or ten large lacerated wounds of the back of the *right* hand and arm, the integument being thrown off in flaps, exposing the tendons, muscles, and superficial vessels and nerves. These wounds reached as high as the elbow, and the distances between them corresponded with the rows of spikes. There was no fracture of the bones of the arm or laceration of the muscles. The next point of injury was the left malar bone, which was fractured by one of the spikes, and then the frontal and parietal bones appear to have been pierced. There were three punctured fractures of the *left* side of the cranium, two through the frontal bone and one through the parietal. One of the former was at the frontal protuberance, the other was an inch and a quarter from the first, and just within the temporal ridge. The puncture of the parietal bone was on a line half way between the other two, and a little more than an inch posterior to the coronal suture. We thus have a tripod of spikes indicated, upon which the boy was impaled.

There were no brain symptoms whatever at the time of admission. The reflected flaps of integument on the arm were returned and secured by sutures, and water dressings were applied to the head and face. This was on a Saturday. The boy did perfectly well until Monday, when there were intervals of delirium; but most of the time he was rational, although quiet and indisposed to talk. He continued thus until Wednesday, when hemiplegia of the *right* side came on. On Thursday the patient was reported to me as very much worse. I found him unable to speak; when he made

the attempt, he did nothing but mutter. He was, however, conscious, when aroused, his eye having an intelligent expression, not according with his inability to speak. On trying to open the mouth to protrude the tongue, I found that he could not use his jaws properly, and was not able to separate them more than half an inch. The inability was greater upon the *left* side than upon the right, the paralysis of which continued unchanged.

So preoccupied was my mind with the idea of compression that tetanus did not immediately occur to me. A consultation was ordered at 4 o'clock Thursday afternoon. On my way home, in thinking of the anomalies of the case, the question arose, "Has this boy tetanus and paralysis together, and is one condition influencing the other?" Drs. Kenderdine and R. P. Thomas met in consultation at the time proposed, when my suspicions were fully confirmed. Well marked trismus, the very characteristic risus sardonicus, and hard abdominal muscles, showed unmistakably the invasion of tetanus. At the same time the paralysis of the right side continued, and although perfect as to the arm, the patient once in a while moved the right leg, but apparently had no voluntary power over it. The rectum and bladder were also paralyzed, and from this time until the termination of the case, the feces and urine were discharged involuntarily. It was concluded not to trephine. The sutures were removed from the arm wounds, and warm water dressings applied. The patient was also given chloroform gtt. xx, fluid ext. of conium gtt. x, every two hours. Under this treatment he became much more quiet. On Friday the tetanus was most thoroughly confirmed, by a remarkable combination of empros and pleurosthotonos, that is, while there was a forward bending, the body at the same time was arched towards the left, as though the paralyzed side had no power of resistance. Throughout Saturday the symptoms continued unchanged, but on Sunday the boy became entirely unconscious, and died on Monday morning, on the 10th day from the injury.

Post-mortem.—The three punctured fractures of the cranium—at the points before indicated—were as clean on the external surface of the bone as though made by a sharp cutting punch. No fissures radiated from them. Small rough fragments of the internal table projected inwards from the margins of the holes, at which they maintained their connection with the sound bone. One of these was at least a half inch in length, and was connected with the fracture of the frontal protuberance. The membranes and brain were lacerated at points corresponding with the fractures. The right anterior lobe was the seat of a large abscess, and this lobe was more lacerated than the middle one. There was no particular congestion or inflammation of the base and medulla. The spinal cord was not examined. The wounds of the arm appeared to be in good condition. An abscess had formed about the left knee joint. The other parts of the body were perfectly normal.

Remarks.—Had the tetanus here a peripheral or central origin? In "Curling on Tetanus," I find a table of 128 cases, of which 110 had the original wound on some part of the extremities, and 69 of these either in the hands or feet; 5 only had wounds of the head. The lacerated wounds of the arm in my case were of the very kinds that are supposed to be more fruitful of tetanus than others.

Did the two conditions of tetanus and paralysis have any influence on each other? Was there a cross action here of any kind? I find two cases which may be considered as having some bearing on these points. One in Curling: "A boy received two shots in the spine; immediate paralysis

of the parts below followed. In seven days tetanus came on in the form of opisthotonos. Laudanum was given, in drachm doses, every half hour during the night; and the next day, caustic potash was applied along the whole length of the spine. There was a mitigation of the paroxysms; the patient slept and awoke free from the tetanic symptoms, but the paralysis of the lower extremities and of the bladder remained. Sensation remained perfect."

In the case just reported both sensation and motion were affected.

In "Longmore on Gunshot Wounds," a case is spoken of thus: "M. Baudens extracted, with an elevator supplied with a canula, a ball which had lodged in the eleventh dorsal vertebra, and was causing compression and complete paraplegia. The paralysis disappeared immediately after the extraction of the bullet, but tetanus came on four days afterwards, and proved speedily fatal." In both these cases there was direct injury to the spine, and there must have been much more laceration of tissue than was made through the integuments of the scalp in my case. In fact the scalp can scarcely be said to have been lacerated, but rather perforated by the polished spikes.

With the case before us, we have then three cases in which paralysis and tetanus coexisted. Doubtless there are others, but I have not been able to find them.

Why, when the intelligence of this patient was good, was he unable to speak, but could only give utterance to moaning and guttural sounds? His tongue was not paralyzed. There was nothing the matter with the base of the brain. The hearing and sight appeared to be good; there was no strabismus. Patients with trismus—at least all I have seen—can speak, although low, yet perfectly distinct. Is the explanation to be found in the cerebral wounds interfering with the will and intellect? It was not owing to a stupefied condition that the patient did not speak, for it was two days before coma came on that he lost the power of articulating, and made his wants known by motions with his left hand and by his eyes.

Surgically, the case is of great interest. Should we have trephined this boy over the three fractures? Does not the post-mortem show that we should, in all probability, have added one more case to the long list which has almost abolished the trephine from the surgical armamentarium? The calvaria has been preserved, and is a rare specimen of punctured fracture, with depression of the internal table.[1]

Nov. 5. *Colloid Cancer of the Omentum, Mesentery, &c.; Scirrhus of the Stomach and Uterus; Colloid of the Ovaries.*—Dr. LEVICK exhibited a specimen of cancer, and made the following remarks respecting it: Mrs. ——, a lady aged 59, had carefully nursed her husband through a long and fatal illness. During this time, which extended over a period of four years, her health had been good for the most part, excepting some little discomfort after eating, which was attributed to dyspepsia. There was also at the same time a tendency to constipation of the bowels. To relieve these symptoms she took small doses of blue mass, but without any appreciable benefit. These symptoms gradually increased, but she was able to attend to her domestic duties, and to go out daily until the early part of August, 1862, when Dr. Levick was first called to see her. He found her in bed, suffering from pain in the abdomen, obstinate constipation, nausea and vomiting, the stomach rejecting almost everything taken into

[1] The specimen was exhibited.

it. Careful inspection revealed the existence of a hard tumour in the epigastrium, extending toward the right hypochondrium. The abdomen was prominent and very tympanitic. The patient was somewhat relieved by the use of a turpentine enema, and the subsequent use of anodynes. The relief was but temporary, and the constipation and vomiting increased to a most distressing degree, large quantities of a dark coffee-grounds substance being thrown up toward the last of her illness. For more than a fortnight before her death she positively refused to take nourishment of any kind, and none passed her lips. In view of the epigastric tumour, and the symptoms before named, cancer of the stomach and intestines was at once diagnosticated. She died October 19, 1862.

The *autopsy* was made three days subsequently. *Exterior.* Emaciation extreme. *Abdomen.* On opening the abdomen a large quantity of serous fluid of a dark yellow colour escaped. As soon as this had all been removed, the abdominal viscera were found to be covered with a gelatinous substance, of the colour and consistence of calves-foot jelly, or in some places a few shades darker, like gum copal. The omentum, as may be seen, is entirely converted into, or replaced by this jelly-like material; it is in many places more than half an inch thick, and is heavy; the locular or honey-comb structure containing the gelatinous ingredient is beautifully apparent. The mesentery, the inner wall of the abdomen, the under surface of the diaphragm, and the peritoneal coat of the bowels, were all covered with the same deposit. The same was the case with the peritoneal covering of the liver, the spleen, and the kidneys; but what is interesting to note, in none of these viscera had the colloid cancer invaded the parenchymatous structure. The liver was in the contracted stage of cirrhosis, but entirely free from cancerous deposit. The spleen is of the usual size, and, excepting its peritoneal covering, unaffected. So too with the kidneys, which, though buried as it were in the soft gelatinous matter, were entirely healthy in their structure. The stomach, as may be seen, is greatly thickened, is hard, and the pylorus the seat of scirrhous deposit. The uterus and its appendages present some points of interest. The ovaries are the seat of colloid cancer, while in the fundus and body of the uterus are two or three tumours, hard, and evidently of the scirrhous form of cancer. The intestines were contracted to the size, in some places, of a goose-quill. The specimen was removed from the body a fortnight since, and by maceration in alcohol has lost its yellow colour.

The thoracic viscera were entirely healthy. Dr. L. remarked that the specimen before the college was especially interesting to him from the fact that the two forms of cancer, scirrhus and colloid, were found associated as they were in this instance, thus establishing the close relationship which exists between them, an identity which had been questioned by some writers on colloid cancer. Especially was this shown in the appearances presented by the uterus and ovaries: the former, as had been already noticed, being the seat of scirrhous tumours; while the latter was exclusively that of colloid cancer.

Cases of Stone in the Bladder. By Dr. GILBERT.—The following cases of calculus vesicæ, in which removal was effected by operation, are respectfully submitted to the college. They embrace all the cases operated upon by the writer, and are interesting mainly in view of the advanced age of the patients:—

CASE 1. Amy, a coloured woman, aged sixty-five years. Operation was

performed by section of the urethra, in 1851, at Gettysburg, Pa., assisted by H. S. Huber, M. D. The stone was large, and had to be broken into fragments before its extraction. These together weighed two ounces, and proved to be of the triple phosphate variety. The patient recovered, and lived until 1854, entirely free from symptoms of calculus.

CASE 2. Mrs. S. G., of Brown Street, Philadelphia, aged seventy-one years. The operation was performed in the same manner, on March 1, 1854, assisted by Drs. Bird, W. K. Gilbert, and Messrs. (now doctors) North and Barker. A light coloured lithic acid calculus, weighing six drachms, was extracted. The patient recovered.

CASE 3. Mr. ——, aged fifty-one years, of Martinsburg, Bedford County, Pa. The usual lateral operation was performed, in which I was assisted by Drs. Getty and Bloom, of the same place, in June, 1853. Fragments of phosphatic calculi, weighing two and a half drachms, were removed. This broken condition of the stone was the result of a previous attempt, by another surgeon, to remove it by the operation of crushing. The patient recovered.

CASE 4. Mr. ——, aged fifty-two years, presented himself at the clinic of the Pennsylvania College, in November, 1853, with symptoms of stone. Being unwilling to submit to the operation by incision, the stone was crushed at several sittings, and large quantities of phosphatic calculus were removed. The bladder became so irritable, however, that the patient refused all further efforts, and left the college before the organ was entirely relieved of its irritating contents. I heard several years subsequently that his sufferings were greatly diminished, so that he did not desire any further operative procedures.

CASE 5. I. McC., Esq., aged seventy-eight years, of Christian Street, in this city, requested me to visit him, in August, 1861. I found him suffering severely from symptoms of stone. A sound was introduced, which immediately enabled me to declare the existence of calculus. The lateral operation was performed in the ordinary manner, on the 28th of the same month, in which I was assisted by Drs. J. H. B. McClellan, R. Levis, A. H. Fish, and W. K. Gilbert. Two calculi, weighing 90 and 100 grains respectively, were removed. These were principally phosphatic, formed around nuclei of dark uric acid calculi, which were exposed in each by friction of the surfaces in contact. This patient was unusually corpulent, being of middling stature, yet weighing two hundred and forty pounds. The perineum consequently was unusually deep. Discharged cured October 11th, and is now living.

CASE 6. Was called to L. F. S., Esq., of Keyport, Monmouth County, New Jersey. This patient, aged eighty-one years and two and a half months, had had symptoms of irritation of the bladder for a number of years, which were borne with but slight inconvenience. On the 9th of August last he rode in a wagon without springs to his farm, six miles from his place of residence. The violent jolting over a rough road gave rise, suddenly, to the most excruciating pains in the region of the bladder. His physician, Dr. B. H. Porter, was called, and, suspecting stone, sounded him, and found his diagnosis correct. I was requested to visit the patient and perform the operation, which was done on the 13th day of August, assisted by Drs. Porter, Dayton, Shackelton, and Croft. The lateral incision having been made, the stone was grasped; but owing to its large size, the right lobe of the prostate gland had to be incised also before it could be extracted. The stone is of the fawn-coloured lithic acid variety, oval in

form, surface studded with large tubercular elevations, and weighs seventeen drachms and two scruples. One side of this stone was evidently attached to the bladder, and became detached during the ride on the 9th in the rough wagon.

The patient bore the operation well; the loss of blood did not exceed four ounces; and he expressed himself quite comfortable, until the urine began to flow through the wound.

Dr. B. H. Porter took charge of the patient, and directed the after treatment. His almost daily reports for the first twenty days were so favourable that there was every reason to believe that recovery was certain. At this stage of the case, however, Dr. Porter became indisposed, and the patient was without any medical attendant, until Dr. Dayton, of Middletown Point, was sent for. A very decided change, of an unfavourable character, had occurred, and the patient gradually became more feeble, and expired on the thirtieth day after the operation. A son of the deceased, who is a clergyman in the Dutch Reformed Church, gave me the following statement incidentally in a letter, written four weeks after his father's decease:—

"He appeared to be doing well until the latter part of the third week after the operation. His appetite was good, and he was at times cheerful. His bowels continued obstinately costive, and Dr. Porter commenced administering small doses of senna every hour, without effect. When Dr. Dayton was called in, he prescribed a wineglass of salts and senna every two or three hours, until it operated. This commenced next day, and became excessive, so that we had difficulty in arresting it, and did not finally until about noon next day. From this time he lost all appetite and began to sink, and so continued gradually until the closing scene, four days afterwards."

From the reported condition of this patient for the first three weeks after the operation it is fair to say that it was successful, so far as the operation is concerned. In all the male cases here reported, chloroform and ether, mixed in proportions adapted to the strength of the patients, were used to full anæsthesia. In none of the cases was there any arterial bleeding, except a trifling amount from the transverse perineal artery, which, with the venous, in no case exceeded four ounces.

It may be observed that the two latter cases rank very high amongst the extreme in age of all reported cases of lithotomy. Chief Justice Marshall, operated for by Dr. Physick, has been considered the most aged person successfully operated on in this country. By reference to the memoir of Dr. Physick, by Dr. Randolph, it appears that Judge Marshall was seventy-six years old when the operation was performed, whereas the ages of the subjects of the last two cases here reported were seventy-eight years and eighty-one years and two and a half months respectively.

Dec. 3. *Hypodermic Injections of Sulphate of Morphia used daily for five months, twice daily for three months, and three times daily for six weeks, with great relief to the patient, and with no unpleasant sequelæ.*—Dr. LEVICK remarked that the Fellows of the College were doubtless familiar with the very interesting paper of Mr. George Hunter, of St. George's Hospital, London, published in the *Medical Times and Gazette* of September 10, 1859,[1] in which he had called the attention of the profession to

[1] See number of this Journal for Jan. 1860, pp. 238–242.

a somewhat novel mode of treatment—that of injecting medicated solutions into the subcutaneous tissue, the *hypodermic* or *subcutaneous injection*, as it is called. Allusion had previously been made to this subject by Dr. Alexander Wood, but Mr. Hunter had gone elaborately into the subject, and given us a paper detailing the results of various cases, in which the subcutaneous injection of the solution of acetate of morphia was resorted to with great relief to the patients. He does not limit its application to the alleviation of local pain, but reports cases of *delirium tremens*, *mania*, *puerperal mania*, *wakefulness*, *chorea*, *tetanus*, and *sciatica*, all of which were more or less benefited by its use. Since his paper was published others of a similar character have been issued, confirmatory of his statement; and very recently it has even been proposed to resort to the subcutaneous injection of solution of quinia in the treatment of dangerous forms of miasmatic fever. Influenced by the statements before referred to, Dr. L., two years ago, had recourse to the hypodermic injection of solution of morphia (Magendie's solution) in several obstinate cases of neuralgia, while on duty in the Pennsylvania Hospital, the result of which was a temporary, and, in some instances, a permanent relief to the patients. The only inconvenience experienced in any of these cases was the occasional occurrence of severe nausea, which, with the formation of abscesses in the cellular tissue, is alluded to by Hunter as sometimes following the injection. The first of these inconveniences, as he justly remarks, cannot be urged as a reason for its relinquishment, as the same result will often follow the administration of opium by the mouth. In these instances, as in that which follows, the instrument used was made in this city. It is of gutta percha, its maximum capacity twenty-eight minims. It has a fine, silver tube about two inches long, terminating in a pen-like point, so fashioned as to readily penetrate the skin. To use it, the skin is pinched up, the point of the tube is cautiously introduced, just far enough to prevent any loss of the fluid, the liquid thrown into the tissue, and the instrument carefully withdrawn. The part immediately becomes white and puckered, but the operation, if properly performed, is an almost painless one.

Dr. Levick now begged leave to call the attention of the College to a case lately under his medical care, in which, after the usual modes of treatment had signally failed, the hypodermic use of the solution of morphia had been resorted to for the relief of intense pain, apparently of a neuralgic character, to the great temporary relief of the patient, and in which this mode of medication had been resorted to daily for five months.

The leading incidents of the case were as follows: —— —— a highly intelligent gentleman, well known to many Fellows of the College, had three years before suffered from an attack of myelitis, with paralysis of the lower extremities, referred to injuries received by a fall. From this illness he had recovered to such an extent as to resume his usual engagements, walking to and from his place of business without difficulty.

In the early part of December, 1861, he began to experience sharp, shooting pains near the hip, following the course of the sciatic nerve, and extending to the calf of the leg. These pains, which at first were slight, gradually increased in severity, and after a few days Dr. L. was for the first time called on to visit him. The phenomena presented were those of intense neuralgia, with the usual absence of fever or other constitutional disturbance. The previous history of the patient was such as to induce the suspicion that there might be organic disease at the root of the nerve, but at this time and later careful investigation failed to detect this, the possible

existence of which was, however, never lost sight of in the subsequent treatment of the case. The pill of carbonate of iron, with small doses of extract of belladonna, and extract of nux vomica, were prescribed and taken for a fortnight or more without any benefit. As the attacks were somewhat paroxysmal, sulphate of quinia, in full, anti-periodic doses, was next resorted to, but with no appreciable advantage. In fact, from this time until the early part of January, 1862, there was a steady increase of the patient's sufferings. Dr. L. remarked that in the whole course of his practice he had never witnessed such long-continued suffering. The pain had lost much of its paroxysmal character; its intensity was such as to prevent sleep, so that the patient spent most of his nights in his chair. This loss of sleep and protracted pain had seriously affected his general health; he had lost flesh, and his nervous system had become so enfeebled that he was unable to attend to business; even the effort to write his name, or the slightest mental exertion, was attended with an increase of suffering. Up to this time he had used successively various narcotic and other remedies. The extract of belladonna, by pill and by suppository, the external and internal use of aconite, extract of hyoscyamus, morphia in large and repeated doses by the mouth, laudanum enemata (70 drops), and the sulphate of morphia in grain doses endermically, had each been tried, but unavailingly, as the discouraged patient himself said, "with little more effect than so much water." After this Dr. L. determined to try the subcutaneous injection, and with this view introduced fifteen minims of the solution of sulphate of morphia (Magendie's solution gr. xvj to f℥j) into the tissue of the affected thigh. The relief afforded was prompt and decided, and the patient, for the first time for several weeks, passed a comfortable night. The pain, however, recurred next morning, and continued during the day; the injection was repeated next night, and with the same good effect. In this way it was repeated night after night, the dose gradually increased until it reached the capacity of the syringe, twenty-eight minims. Dr. L. remarked that the temporary relief thus afforded was almost magical. Frequently on his evening visit he would find his patient in an agony of suffering, and five minutes after giving the injection, would leave him composed quietly for the night.

During this time measures for the permanent relief of the patient were not neglected. In the early part of February, the injection was given twice daily, the second dose about twenty minims at 1 o'clock P. M., and, not to weary the College by unnecessary details, after this all other modes of medication were abandoned and the hypodermic injection solely relied on. In the latter part of February, a third injection daily was given at about five o'clock in the morning, the effect of the evening's dose beginning to pass off by that time. Twenty minims were given at this time. To recapitulate, from the early part of January to the middle of June, the injection was used every night; from the early part of February to the same time in May, twice daily; and from the latter part of February to the middle of April, three times daily. During this time no unpleasant head symptoms occurred. On the contrary, a marked improvement of the nervous system was evident, and the patient gradually engaged in pursuits requiring increasing mental efforts. As this improvement took place, the early morning and the mid-day injections were gradually omitted, while that at night was continued as before. An attempt was several times made to inject in other parts of the body than the affected thigh, but this was not satisfactory to the patient, and with, perhaps, three or four exceptions, the injections were

all made in the right thigh. That this mode of medicating was not a very painful one, may be inferred from the fact that it was at the earnest solicitation of the patient himself that other modes were abandoned, and that the third daily injection was given him.

As the mild weather approached, the invalid went out daily to drive, spent some days in the country, and in June went to the seaside where, as his health improved, the remedy was entirely withdrawn. To do this was no easy matter. The relief afforded had been so great that the patient dreaded its abandonment, and this last was only effected by the cautious management of his devoted nurse, to whom its administration had for some months been intrusted. It was, however, successfully accomplished by the substitution of water, drop by drop, for the morphia solution. After a brief residence at the seaside, the patient returned to the city, gradually resumed his business engagements, and remained in good health during the summer and autumnal months. During the recent cold weather there had been some return of pain, but not such as to confine him to the house.

Dr. L. remarked, that it would be observed that in this case no claim was made for a radical cure, by the hypodermic injection, of the disorder under which this patient laboured. But what was of interest in the case, and what was claimed for this mode of treatment, was, *First.* That after other measures had signally failed, the subcutaneous injection afforded prompt, and, for a time, complete relief from pain. *Secondly.* That by the regular repetition of the injection the patient was made comfortable, refreshing sleep obtained, and in this way life was protracted until the weather had become such as to permit him to use those hygienic measures which resulted in the restoration of his health. *Thirdly.* That although the injection was used so frequently, and for such a long time, no unpleasant sequelæ resulted. There was no disturbance of the head, and no nausea; no abscesses of the cellular tissue formed; and although the points of insertion were so numerous that it was sometimes difficult to find a spot where the instrument had not already been introduced, yet all these healed readily, and there was now nothing left to indicate where the injections had been used.

Under these circumstances Dr. L. did not hesitate to recommend the hypodermic injection as a valuable addition to our modes of medication.

REVIEWS.

ART. XV.—*Consumption: its Early and Remediable Stages.* By EDWARD SMITH, M. D., F. R. S., Assistant Physician to the Hospital of Consumption and Diseases of the Chest, Brompton, etc. etc. London: Walton & Maberly, 1862. 12mo. pp. 447.

DOES the clinical history of pulmonary tuberculosis include an appreciable period prior to the deposit of tubercle in the lungs? Few, if any, at the present time, regard this disease as primarily local. The deposit of tubercle is a result of an antecedent morbid condition of some kind, existing somewhere in the organism. This antecedent morbid condition is, in fact, the disease, of which the pulmonary tuberculosis is the local expression; we call it a cachexia or a dyscrasia, and our present pathological notions lead us to suppose that it involves some special blood-change. Not stopping to consider the soundness of this general doctrine, but assuming it to be most consistent with our existing knowledge, it follows that there is probably a period, prior to the deposit of tubercle, when the disease in reality exists. The disease exists when the cachexia has been produced; the cachexia precedes the tubercular deposit; hence, regarding these as consecutive events, it is reasonable to suppose that not only during the production of the cachexia, but after it has been produced, more or less time may elapse before the occurrence of the local expression of the disease. Now, the question is, does this period form an appreciable part of the clinical history of the disease; in other words, is this period accompanied by diagnostic symptoms? The author of the book, the title-page of which is placed at the head of this article, takes the ground that there is a period, prior to the deposit of tubercle, which is to be considered as a stage of the disease; he calls it the pre-tubercular stage, and he considers this stage as rendered appreciable by certain general and local symptomatic events.

The importance of the question which we have propounded is sufficiently apparent. If the tuberculous cachexia exist, for a greater or less period, prior to the tuberculous exudation, and we are able to determine the existence of the former before the occurrence of the latter, we may hope that the diagnosis during this period may be made of immense practical value. It is reasonable to suppose that at this period, more than at any other, the disease is amenable to proper management. We cannot doubt that the tuberculous cachexia may be removed, and it were gratuitous to discuss the advantage of removing it before the lungs are damaged by the deposit of tubercle. The only questions for discussion are, How are we to ascertain the existence of this pre-tubercular stage? and, What measures are to be pursued to effect the removal of the cachexia? Dr. Smith calls this a remediable stage, and the leading object of his work is the consideration of its diagnostic criteria, together with the management of the tuberculous disease. In view of the very great importance of the subject, we propose to review, in the first place, that portion of the work which treats of a pre-tubercular stage; and, in the second place, the therapeutical views which the author inculcates.

In seeking for the symptomatic phenomena which belong to a pre-tubercular stage, the attention is to be directed to symptoms referable to the pulmonary organs, as well as other parts of the body and the system at large, and to the physical signs. The author adopts this division of signs and symptoms, and considers the latter first. His method of investigation consists in inquiring of a large number of phthisical patients respecting the different functions of the body prior to the obvious manifestations of pulmonary disease. As a method of obtaining evidence of a pre-tubercular stage, this method is open to criticism. What proof have we that the various functional disturbances thus ascertained are either effects or concomitants of a tuberculous cachexia prior to the deposit of tubercle? They may have preceded the cachexia, and perhaps contributed to its production, being causes rather than consequences of it; or, on the other hand, they may not have preceded, but followed, the tuberculous deposit, the latter not having been at once manifested by obvious pulmonary symptoms. To determine with any degree of positiveness the symptoms of a pre-tubercular stage, we must have adequate proof of the non-existence of a deposit of tubercle after a certain epoch, and the date of the occurrence of a deposit must be fixed. These points can only be settled by careful physical explorations. Herein lies the difficulty of accepting the results of the author's inquiries of phthisical patients as evidence of a pre-tubercular stage. The symptoms which he ascertains may have preceded the cachexia, or they may have followed the production of the cachexia and preceded the deposit of tubercle; or they may have followed the deposit of tubercle. Their precise relations to tubercle are not determined, but, whatever these may be, as occurring antecedently to the obvious manifestations of pulmonary disease, they are interesting and important. We proceed to give succinctly the results of his inquiries.

The appetite was seldom natural, but was somewhat lessened in respect of food in general and of some foods in particular, and was commonly wayward and uncertain. It is worthy of being specially noted that fatty articles of food were less commonly liked than by persons who become affected with other diseases. There was commonly some derangement of the function of digestion, but frequently the derangement was small. The amount of food taken was commonly somewhat lessened. The assimilation of food was commonly defective, and the weight and bulk of the body were almost universally lessened.

The elimination of fluid by the skin was increased. There was a general tendency to defect of temperature of the body. The muscular power was commonly lessened. The circulation was commonly enfeebled and somewhat quickened. The menstruation was frequently disturbed, and there was much liability to leucorrhœa. Muscular pains about the chest were very common. There was commonly a state of hyperæsthesia of the throat. There was only a small or moderate amount of coughing, and a small amount of expectoration. In a majority of cases there was some degree of hæmoptysis. Much of the coughing and expectoration, and occasionally the hemorrhage, the author refers to the pharynx.

The foregoing conclusions, which the author draws from his interrogatories, are expressed in his own language. We have omitted details, some of which must have cost the author considerable labour, and also considerations explanatory of the supposed relations of the disordered functions to the tuberculous cachexia. We repeat, these results are not without interest and importance, but as furnishing diagnostic symptoms of a pre-tubercular

stage, they can hardly be considered as having much significance or value. Would the physician be warranted in predicating the existence of a tuberculous cachexia on the functional disorders just quoted? We think the reader will concur in the opinion that this question cannot be answered in the affirmative. We pass to the physical signs referable to the pulmonary organs.

The first sign mentioned is lessened movement of the chest. The diminished expansion, he affirms, exists in every case. It is general; that is, it is not confined to one side or to the summit, but extends over all the movements of respiration. The amount of inspired air is lessened, as shown by the spirometer, which the author regards as less fallacious than the inspection or measurement of the chest. The next sign is involved in that just noticed; viz., feebleness of the respiratory murmur. The author believes that this change invariably precedes the deposit of tubercle. He thinks that a diagnostic character of the weakened murmur which precedes tubercle, as compared with the weakness caused by general debility, consists in the fact that, in the latter case, the normal intensity of the murmur is brought out by forced breathing, while it is otherwise in the former case.

The author does not state how often he has found these signs present at a time when, as he believed, tubercular deposit had not taken place, in persons who subsequently became tuberculous. He does not state that he has even observed a single instance of this kind. We think he was bound to present the data on which his statements are based. Clinical observation, of course, can alone furnish the proper data for conclusions; *à priori* reasoning is inadequate. Nor is it sufficient to say, which the author does not, that these signs were found in persons who, it is believed, would have had a deposit of tubercle if proper measures had not been taken to prevent this result. In order to consider these signs as denoting a condition of the lungs in which a deposit of tubercle has not yet taken place, but will take place unless prevented, they must be shown to have existed in cases of confirmed tuberculous disease at a time when there was satisfactory proof that the deposit had not taken place. This evidence of their diagnostic significance the author may have obtained sufficiently for his own satisfaction, but he does not present it to the reader.

We must say that, were these signs proven to represent physical conditions which precede the deposit of tubercle, we much doubt their availability in diagnosis to any great extent. Diminished respiratory movements, lessened vital capacity, and enfeebled respiratory murmur, express deviations, not from any fixed normal standard applicable to all healthy persons, but to a standard of health proper to each individual. There are wide variations in these respects among different persons in health. All who have given much attention to examinations of healthy chests must be aware of this fact. To be able to judge, in any case, with respect to these signs, we must know the healthy standard in the person examined. This knowledge we seldom have, because persons in health do not present themselves for examination. This difficulty would not be nearly so great if the signs which have been mentioned were limited to a portion of the chest; we should then have the advantage of a comparison of the two sides. We confess we are unable to understand how the author can come to a conclusion respecting a general diminution of the breathing movements, of the amount of inspired air, and of the respiratory murmur, in individual cases, unless it have so happened that he is familiar with the patient's condition in these respects when in perfect health.

Dulness on percussion is another sign of the pretubercular stage to which the author attaches much importance. He thinks that, before the deposit of tubercle, there is an appreciable degree of dulness on the clavicles and over the chest in general. He attributes it to the absence of the full amount of air in the lung tissue. This dulness, although general, is apt to preponderate on one side. The remarks with reference to the diminished breathing movements and murmur are equally applicable here, in so far as dulness over the whole chest is concerned. If the practitioner be not familiar with the normal resonance of his patient, how is he to decide that it is abnormally diminished, in view of the wide differences, in this respect, in different persons in health? If relative dulness exist on one side, as compared with the other side, the first question is, may it not be owing to a normal disparity? A disparity exists to which the author does not refer. The right side, at the summit, is slightly dull as compared with the left side. This disparity is more or less marked in most healthy persons when percussion is practised with the care and delicate comparison of sounds of which the author speaks. The next question is, if the dulness be not due to the normal disparity, may it be fairly attributable to diminished expansion of lung prior to the deposit of tubercle, or does it not denote the existence of the deposit? We must confess that an abnormal dulness at the summit of the chest on one side, existing in a case in which subsequently unmistakable proof of tubercle was developed, would, for us, be evidence that tubercle already existed; in other words, the author adduces no facts which go to show that dulness precedes the deposit of tubercle.

We have cited the only signs which the author adduces as representing the condition of the pulmonary organs in the pretubercular stage. Assuming that, probably, such a stage in reality exists, and concurring fully with the author in the importance of its practical recognition, we are forced to conclude that he fails to indicate symptoms and signs sufficiently distinctive to be available in diagnosis, or facts adequate to establish its existence. The candor of criticism compels us to say this; but, in saying it, we would not disparage the value of the work as regards the interesting and useful considerations which it presents relating to the causation, pathology, and symptomatology of tubercle. While it does not claim to be a comprehensive treatise on the subject, we are sure that the medical reader will peruse it with gratification and profit.

The author considers not only the pretubercular stage of the disease, but its early and remediable stages. The experience of all practitioners will confirm the statement that, in the great majority of cases, tuberculous patients do not make application for medical aid until after the deposit of a greater or less amount of tubercle. It is an early and a remediable stage when the deposit is recent and the quantity small. Other things being equal, the disease is remediable in proportion to its short duration and the little damage to the lungs which the deposit has occasioned. We cannot but suspect that Dr. Smith has considered cases as in a pretubercular stage when a tubercular deposit already existed; but, waiving the discussion of this point, how vastly important is it to recognize the existence of a small deposit of tubercle! There is scarcely a problem in practical medicine of greater importance than the diagnosis of pulmonary tuberculosis shortly after the occurrence of the deposit. We should have been glad if the author had considered more fully than he has done, the diagnostic symptoms and signs of this stage of the disease. We believe that the diagnosis may be made in most cases at a very early period after the deposit has taken place.

We make this statement after a long and pretty extensive experience. But the diagnosis involves a degree of attention to physical signs which is bestowed by few practitioners. We hope not to be misapprehended in this remark. We are far from wishing to arrogate any special skill; we mean only that auscultation and percussion are not sufficiently studied by practitioners in general. A prevalent belief that practical skill is more difficult of acquirement than it really is, doubtless contributes not a little to a neglect which is much to be regretted.

We do not propose to consider the points involved in the early diagnosis of tubercle. To do this would require too much space, and, moreover, would, in this connection, be out of place. We will only say that the diagnosis requires a practical knowledge of the distinctive characters of physical signs, based on an analysis of the abnormal sounds, and a comparison with the normal sounds as regards differences relating to pitch, quality, intensity, and rhythm; it requires a practical acquaintance with the normal disparity between the two sides of the chest in the sounds obtained by auscultation and percussion, and it requires a fair amount of the judgment and tact which are only to be acquired by practice. The importance of the object should secure for the means of diagnosis more attention than they generally receive.

One-half of Dr. Smith's work is devoted to the treatment of tuberculosis. We find in this portion of the work no occasion to join issue with the author, but, on the contrary, much which we would commend to the reader's attention. Dr. Smith attaches far greater importance to hygienic measures than to drugs, in the treatment of the disease. This is a point to be impressed on the minds not only of practitioners, but of tuberculous patients. The latter must understand fully that the arrest of the disease is not to be effected by any special medication. Understanding this, they will place their dependence on those measures of diet and regimen which will not be likely to be properly carried out save with the conviction that the reliance is chiefly on these measures. For the successful management of tuberculosis, the faithful co-operation of the patient is essential, and failure of success not infrequently may be attributed to want of sufficient energy and perseverance on the part of the patient.

Dr. Smith regards the inunction of oils or fats as productive of a certain amount of benefit by restraining excessive elimination of fluids from the skin, and protecting the surface against atmospherical impressions. He considers its beneficial agency as altogether mechanical, attributing nothing to absorption. He prefers the ordinary spermaceti ointment for the inunction. It should be continued for several successive days, and then intermitted for a short time. Sponging the surface with cold water, followed by brisk friction, he recommends in the intervals when inunction is omitted, and habitually when inunction is not resorted to. Of the latter measure we can speak favourably from experience. There are few cases in which, with proper precautions, it may not be resorted to with advantage.

As regards clothing, his views appear to us highly judicious. The surface is to be protected against changes of temperature by garments worn next the skin, composed of materials which are good non-conductors of heat, and, with this protection, the body is to be kept cool instead of being over-heated. A superabundance of clothing is not less hurtful than a deficiency; perhaps even more so, on account of the loss of fluids by perspiration, and the increased susceptibility of the skin to atmospherical influences. An excess of clothing interferes with active exercise, owing to the encum-

brance, and the inconvenience from heat and sweating. Dr. Smith enjoins that flannel should be worn next the skin. Raw silk is perhaps an equally good non-conductor of heat, and may be substituted when preferred. But, in a cold climate, we think the chamois-leather jacket worn over light woollen or silk, is to be strongly recommended. It is sufficiently porous, and affords such substantial protection that cumbrous outer garments may be dispensed with. With the body properly protected, out-door life is to be advised, and exposure in almost all kinds of weather is not only admissible, but advisable. There is no hygienic measure in the treatment of tuberculosis of greater importance than this. In how many cases has a favourable progress in this disease been retarded, or prevented, by needless apprehensions of exposure and of over-exertion! We may here remark that tuberculous patients, as a rule, are not more prone to attacks of bronchitis or colds, than healthy persons; and, when such attacks occur, they do not appear to exert any marked influence on the tuberculous disease.

The author is fully impressed with the importance of abundant alimentation, and of supplying a proper variety of alimentary principles. Fatty articles should, if possible, form a fair proportion of the diet. The author remarks that some persons who have a disinclination for most kinds of fat, are able to take certain kinds without repugnance. He reckons alcoholics among the articles of food, and considers them as important, but not exerting any special anti-tuberculous influence. Many practitioners on this side of the Atlantic consider alcoholics as useful, remedially, in tuberculosis, and in this view we have participated. We are satisfied, however, that all are not benefited alike by them, and that, in some cases, they are not useful. They should never be given to the extent of affecting the brain, accelerating the circulation, producing perspiration, or inducing an indisposition to muscular exertion. The patient should be sensible of an agreeable and beneficial effect of their use; if not, they will not be likely to be useful. We would add to the articles which are especially useful, sugar. This should enter into the diet as largely as the taste of the patient will allow, provided it do not occasion disturbance of digestion. We are tempted to quote the author's directions as regards food in the early stage of phthisis. It will be seen how vigorously he enforces alimentation. Perhaps he pushes this part of the treatment to an extreme; but it is better to err in that direction than on the side of deficiency. Upon alimentation and out-door life, improvement and recovery depend vastly more than upon any of the other measures of treatment. We quote from the work as follows:—

"The patient should take from two to three pints of milk daily, prepared (and we would add *thickened*) with chocolate, arrowroot, flour, gluten, semola, oatmeal, or bread, or made with eggs, etc. into puddings. In cases where new milk does not agree, skimmed milk may be in part supplied, and then, if fats be tolerated, half an ounce of suet, cut finely, should be well boiled in each pint of milk and taken quite warm. The milk should be eaten in somewhat small quantities, say half a pint at a time; one quantity is to be taken immediately on the patient awaking in the morning, others at breakfast and supper, the milk pudding for dinner, and chocolate or coffee may be added to the milk which is taken at breakfast and tea. Food should further be taken at intervals of from two to three hours, and the dinner should be supplied soon after mid-day. Half a pint of good soup, with bread, may be taken between breakfast and dinner, and, if fats are not disliked, it would be better to prepare the soup from ox heads or shins, so as to supply both oil and jelly in addition to the juices of the meat, and the whole should be well thickened with groats or corn flour. Eggs, bacon or meat should be taken at breakfast, and abundance of fresh meat at dinner, with soup, pudding, and a moderate quantity of fresh vegetables, French beans,

and bread. The meat should be of the richest quality, and have at least one-third of its weight of fat. If the patient like salad oil, it may be eaten as freely as possible. A small quantity of cheese should be added to the dinner. An egg should be taken at the tea meal, and also at supper when milk is not taken. There should also be a cup of milk and bread and butter placed at the bedside of the patient, and eaten, if possible, during the night. Beer or wine may be taken at dinner and once or twice at other periods of the day, if it be found to agree with the system, and the dose be so moderated that it may not in the least affect the head, or cause heaviness in, and indisposition to move the limbs. Usually wine should be taken with hot water; but when the progress of the case is satisfactory, alcohols are not necessary. All food should be taken hot, and prepared so as to please the taste of the patient." (p. 329.)

The reader will perhaps be led to say that the author gives the patient but little time to do aught else than to eat. Exclusive of out-door exercise, he cannot do anything more conducive to his welfare. There is, of course, a limit to dietetic measures; the digestive powers must not be overtasked, but their fullest capabilities are to be made available, and this can be done by systematic, persevering efforts to a far greater extent than is generally supposed.

Dr. Smith recommends the practice of promoting expansion of the lungs by voluntary efforts of deep inspiration. Whatever advantage accrues from this, may be obtained, as it seems to us, by muscular exercise in the open air.

The remedies which he deems useful with reference to the arrest of tuberculous disease, are chiefly those which promote appetite and digestion. For these objects he advises the tinct. ferri sesquichloridi, or the citrate of iron and quinine, with some of the bitter infusions. Cod-liver oil is advisable when tolerated. For the cough he considers the best remedy to be 1-16th or 1-12th of a grain of morphia in mucilage or syrup.

The last seventy pages of the work are devoted to the climatic advantages of certain situations, viz., Scarborough, the Isle of Man, Scotland, Switzerland, various parts of England, the Nile, Pau, Madeira, and Rome. He presents details respecting humidity, mean temperature, etc., of several of these situations.

In taking leave of the work, we would express the hope that the author will furnish occasions for a renewal of our intercourse as a reader, if not as a reviewer. A. F.

ART. XVI.—*On Asthma; its Pathology and Treatment.* By HENRY HYDE SALTER, M.D., F.R.S. London, 1860. 8vo. pp. 372.

THE only sure foundation for the rational treatment of a disease, is an accurate knowledge of the pathological elements which it involves, and its separation as a morbid entity from all analogous affections, as well as from the phenomena which accidentally become attached to it. When this object has been attained, and then only, does it become possible to discover its pathogenesis, or accurately to determine the value and the mode of operation of the several remedies which are employed for its cure. So in chemistry the isolation of a substance from its associated substances forms the preliminary step to an investigation of its nature and habitudes. Without such an isolation of a disease, all discussions respecting its nature lead to

results as imperfect or erroneous as the estimate of a chemical element does which has never been examined except in combination. It is often claimed that the great glory of natural science in the present age is the application of a rigorous method of analysis to its study; but this is quite as true of human physiology and pathology as it is of any among the sister sciences. Indeed, if we examine the progress of medicine during the last half century, we shall be convinced that a very large proportion of it has been achieved by the separation of morbid states which were previously confounded, or which were only imperfectly distinguished from one another, and by the subsequent experimental application to each of them of different methods of cure.

Such a work has been performed for "Asthma" in the volume which we propose to examine, its object being to prove "that asthma is essentially, and, with perhaps the exception of a single class of cases (the humoral), exclusively, a nervous disease: that the nervous system is the seat of the essential pathological condition."

The author devotes some space to refuting certain theories, and particularly Dr. Bree's hypothesis that the phenomena of the asthmatic paroxysm are due to an extraordinary effort to get rid of some peccant and irritating matter existing in the air tubes. But this, we think, is labour lost; for the hypothesis is purely and simply gratuitous, nothing whatever having been brought forward by its author which is capable of affording it the slightest foundation. If he had possessed the light afforded by more recent observation, he would probably have modified his views so as to embrace the numerous instances cited elsewhere in the present work, which appear to prove that certain substances after digestion and absorption act as specific irritants upon the lungs. But this theory involves the element of spasm, which Dr. Bree did not accept. Equally illogical, and founded upon unreal pathological conditions, are the notions that asthma depends upon bronchial mucus, or upon thickening of the lining membrane of the bronchia. Evidently, these permanent conditions cannot be invoked to account for phenomena the characteristic peculiarity of which is their sudden occurrence in the midst of apparently good health, and often without the intervention of any palpable exciting cause. It deserves to be remarked, in the words of Sir John Floyer, that "the lungs do not appear to be much oppressed with phlegm before the fit; and at the end of the fit the straitness goes off before any considerable quantity is spit up." Dr. Mason Good quotes this passage as describing what he himself had witnessed, and in opposition to the theory of Dr. Bree, and elsewhere refers to the fact it describes as proving evidently "that the inner membrane of the bronchial vessels is in a state of peculiar dryness." (*Study of Medicine*, i. 557.) Certain speculatists conceive that there is a specific something circulating in the blood whose property it is to excite asthmatic attacks. We find, it is true, that particular articles of food, almost as various as the cases of the disease are numerous, tend habitually in the same person to develop the paroxysms; but these facts evidently prove the peculiar susceptibility of the patient himself rather than the special virulence of the noxious agent; they indicate, indeed, a nervous rather than a humoral pathology for the affection. The late Dr. Todd, like Dr. Bree, argued in favour of a special *materies morbi*, because, according to him, asthma in many points resembles gout. Dr. Salter thinks it worth while to state this theory at length and seriously to refute it. The reputation of its author may have seemed to require this trouble; the theory itself certainly did not.

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During the prevalence of doctrines which emanated from the school of the pathological anatomists, it was difficult to procure belief in the existence of any disease which did not impress upon the organs a material change. When not even the primary lesions of the inflammatory process could be detected, a state called irritation was assumed to exist, which appears to have been a hypothetical organic nisus towards inflammation. It had little in common with that sort of impression upon one portion of the nervous system which awakens action in another, and perhaps distant part, a phenomenon which belongs to the province of nervous pathology, and which, although formerly recognized distinctly, did not until recently become familiar as a mode of morbid as well as of normal action. It is, indeed, hardly to be wondered at, that the brilliant discoveries made of the connection between symptoms and organic lesions should for a period have blinded pathologists to the nervous elements of disease, and that the idea of purely nervous affections should have excited a feeling not unlike derision. We may, therefore, pardon so accomplished a physician as Dr. George Budd when, as late as 1840, he avowed his scepticism in regard to the existence of pure nervous asthma; and we cannot feel great surprise that Laennec himself should have been obliged to say that "among contemporary physicians, who have most cultivated morbid anatomy, many altogether deny the possibility of spasmodic dyspnœa, and most of the others are disposed to embrace the same opinion." In 1817, Rostan attributed all cases of asthma to diseases of the heart or of the great vessels. Broussais held the same doctrine; and in 1844, the learned commentator, Dr. Adams, wrote: "It seems likely that the paroxysm is occasioned by thick and viscid mucus infarcted in the lungs." Even M. Beau, the dexterous physical diagnostician, appears to have used his peculiar skill only as guide to error in this matter; for he, like the writer just named, attributes all the phenomena of asthma to bronchitis. Nor did he so in ignorance of the doctrine of bronchial spasm; since he blames those who maintain it for an undue deference to medical tradition.

There is another theory from which Dr. Salter dissents, not because it ignores the nature of the elements involved in asthma, but because it imposes a wrong interpretation upon the phenomena of the disease; it is that which attributes them to *paralysis* of the bronchial tubes. To this he objects as involving the supposition that the tubes are agents of respiration, a supposition to which, in common with Dr. Budd, he emphatically objects, because "respiration is under the influence of the will, while the contraction of the bronchial tubes is essentially involuntary." According to Dr. Budd, we should, therefore, by quickening the respiratory acts, speedily cause the proper accordance between the dilatation of the chest and that of the bronchia to cease, and the one to dilate while the others were contracting. This would, certainly, be the case if the rate of movement of the muscles of the bronchia were uniformly the same; but for such a supposition there is no ground whatever. The muscles of the heart, of the intestines, &c., contract more or less rapidly according to the more or less frequent renewal of the stimulus which excites them, and no idea of normal muscular contraction of the bronchia can be conceived which does not imply its perfect reciprocity with those general thoracic movements which are involved in the respiratory act. To say that respiration "is under the influence of the will," implies the movement at a quicker or slower rate of *all* the muscles concerned in that act, bronchial as well as thoracic; and we are not authorized to assume for the latter and deny to the former a

subjection to volition, when it is evident that both must move simultaneously, or at least co-ordinately. Besides, it is scarcely correct to oppose these two sets of muscles as voluntary and involuntary. The thoracic muscles have the one character or the other, according to circumstances. However we may, for a limited period, by an act of volition, control the rate of their movements, they are none the less involuntary muscles during sleep and in all other states of unconsciousness.

But because the movements of the bronchial muscles must be synchronous with those of the chest, whatever their rate of motion, it does not follow that in asthma the former are paralyzed. Nor do we perceive the validity of the admission made by Dr. Salter that this view would lend a ready explanation to "the extreme difficulty and prolongation of expiration." On the contrary, it would seem as if the air should be more rapidly expelled in expiration if the bronchia opposed no obstacle to its escape, such as would exist if they were contracted, provided the contractility of the lungs remained unimpaired. Another reason which, in the opinion of Dr. S., favours the paralysis theory, is "the permanent state of distension at which the chest is kept during the asthmatic paroxysm." But if this state does not exist, as an essential part of the paroxysm (which we shall endeavour to make probable), the theory is no longer to be entertained.

The second chapter of the present work sets forth the doctrine, which it is one of the author's principal objects to expound, viz., that asthma is essentially a nervous disease. This proposition is very fully and very ably demonstrated. The causes, it is shown, are chiefly such as operate upon the nervous system, among which mental influences hold a conspicuous place, and particularly sudden alarm and other emotional excitements. These are equally remarkable for suspending or arresting the paroxysm in many cases. The most efficient remedies are from among those which act upon the nervous system, and in an especial manner certain narcotics and antispasmodics. The periodical recurrence of the attacks, and particularly their proneness to take place at night when the susceptibility of the nervous system is peculiarly alive; the copious excretion of limpid urine, the neuralgia and frontal headache, the antecedent drowsiness and languor, or, on the other hand, the unwonted hilarity and animation which often precede the paroxysms, are phenomena of the same class.

The second proposition of Dr. Salter is—

"That the phenomena of asthma—the distressing sensation, and the demand for extraordinary respiratory efforts—immediately depend upon a spastic contraction of the fibre-cells of organic muscle, which minute anatomy has demonstrated to exist in the bronchial tubes."

After showing that these phenomena are not to be ascribed to heart disease, bronchitis, or emphysema, the author calls attention to the fixed and rigid immobility of the thoracic walls, and the absence of respiratory murmur during the paroxysm, even while the external muscles are labouring by violent action to move the chest. In other words, the distress of the patient is evidently owing to the difficulty which the air experiences in reaching the pulmonary vesicles, not because the external muscles prevent it—for their action is intermittent, and, as far as it goes, would tend to dilate the chest and introduce the air for lack of which the patient is suffering—but because the muscles of the bronchia themselves diminish the calibre of these canals, and, by preventing the ingress of air, render the efforts of the external muscles abortive. An additional evidence of this fact is the existence of sibilant

rhonchi and wheezing, which can only be caused, in the absence of mucus, by the irregular contraction of the tubes themselves.

"Thus we see," remarks Dr. S., "by evidence as certain as sight, that in asthma bronchial spasm must and does exist, and that no other conceivable supposition will explain the phenomena."

The author then alludes to the anatomical proofs of the existence of circular muscular fibres in the bronchia, even to their minutest divisions, and points out how wide-spread their connection is with various organs through the vagus nerve, the cervical portion of the sympathetic, and the anterior and posterior pulmonary plexus. He also refers to the experiments of Volkmann, Williams, and others, which prove that the bronchial tubes undergo contraction, even to complete occlusion, from the application of various stimuli both to the tubes themselves and to the trunks of the pneumogastric nerves.

It would, we think, have added force to the author's reasoning had he informed his readers that the doctrine of the muscularity of the bronchial tubes, and of the spasmodic nature of asthma, dates far back of the discoveries and experiments to which he alludes; far back, also, of the demonstration of the circular fibres by Reisseissen (1821), which Dr. Copland claims as his own, and Cruveilhier adjudges to himself; and even from an earlier period than Cullen, of whom Dr. Budd says, "Since the time of Cullen, the muscularity of these fibres has been adduced to explain the symptoms of asthma." Indeed, after WILLIS wrote, the existence of bronchial muscular fibres was as fully admitted as that of the muscles of the larynx itself. Nothing can be more explicit than the description which this author first published in 1673. After describing the straight and circular fibres of the trachea, he says:—

"The coats of the bronchia have muscular fibres of both kinds; from whence we may conclude that all the lesser pipes of the aspera arteria have their constant turns of systole and diastole, viz: all the pipes are contracted when we breathe out, and relaxed while we suck in air."

This, let it be remarked, is also the very furthest and latest conclusion of modern physiology on the subject.

When Willis would explain the phenomena of asthma, he says:—

"The animal spirits destined to the function of breathing . . . . enter inordinately into the fibres, as well *nervous* as *moving*, of the organs of breathing, and make them for that one cause one while to be contracted, another while to be distended, irregularly, as also their solemn and equal turns of systole and diastole to be variously disturbed and hindered." (*Of the Medicines of the Thorax*, 1684.)

Finally, he places the immediate cause of the paroxysm either—1, in the muscular fibres; or 2, in the nervous branches; or 3, in the brain. If for *brain* we write *nervous centres*, we shall find in Willis the essence of the modern pathology of asthma.

Let it be further remarked that Willis refers to the belief of the ancients, and of his own cotemporaries, that all asthma depends on mechanical obstructions of the air-passages, while he himself admits asthma from mechanical, and asthma from spasmodic—or, as he terms them, convulsive—causes. He even goes further, and points out how an asthma which was at first mechanical only may become convulsive also, just as we see spasmodic asthma superadded to dyspnœa produced by vesicular emphysema.

"Hence," he says, "it may be concluded that every asthma is a mixed affec-

tion, stirred up by the default partly of the lungs ill-formed, and partly by a default of the nerves and nervous fibres appertaining to the breathing part."

If we apply this remark to the confirmed disease, it expresses precisely what the most recent and accurate observation has taught.

BONETUS, the cotemporary of Willis, in France, and scarcely less eminent, followed in the same doctrine. There are, he says,

"Several causes of dyspnœa;" the air tubes may be "choked up, compressed, or *too closely contracted.*" . . . "The branches of the trachea sometimes, *their fibres being spasmodically affected*, are too much drawn up and quite closed, and prevent the ingress of air necessary for respiration. Hence, although no obstruction exists in the lung, or any malformation, or any consumptive diathesis, yet these fibres being preternaturally convulsed, and at the same time contracted, terrible paroxysms of asthma often occur." (*Sepulchretum*, i. 385.)

Again, in England, a few years later (1698), was published a work which is still, and must remain, a classic in the literature of asthma. In this, Sir JOHN FLOYER says (p. 8):—

"The muscular fibres of the bronchia and vesiculæ of the lungs are contracted, and that produces the wheezing noise which is most observable in expiration."

And again (p. 43):—

"This contraction *of the vesiculæ* is very probable, because the bronchia are contracted and *the vesiculæ have the same muscular fibres* to help respiration, by which they may be drawn up so as not to admit air."

Muscular fibres of the vesiculæ! Once more a literal anticipation of the farthest reach of our anatomical research, advanced as we are more than a century and a half beyond Floyer upon the road of scientific discovery.

Without going back to Van Helmont, who, even before Willis, attributed the phenomena of asthma to spasm of the air-tubes, we must not omit noticing the testimony of that giant among modern physicians, FREDERIC HOFFMANN. In 1707, he wrote as follows:—

"While the diaphragm, the intercostals, and the *sensitive membrane which everywhere lines the pulmonary cells* are spasmodically contracted, the capacity of the chest is contracted, expansion of the lungs is prevented, the entrance of sufficient air into the lung-cells is hindered," &c. (*De Asthmate Convulsivo*, 1707.)

In studying such a subject as this, we must not forget to consult WHYTT, who in so many points was in advance of his scientific cotemporaries. He defines (*Observations*, &c., 1764, p. 260) spasmodic asthma to be—

"That species of difficult breathing which is not owing to any obstruction in the lungs, or load of humours compressing their vessels, but to *an uncommon contraction of their bronchial tubes and vesicles*, whereby they do not yield as usual to the pressure of the air in inspiration."

CULLEN, too, a few years later (1772) wrote, "The proximate cause of this disease is a preternatural, and, in some measure, a *spasmodic constriction of the muscular fibres of the bronchiæ.*"

It appears, then, that from the time of Willis, at least, the distinction of nervous asthma from dyspnœa produced by physical causes was fully recognized, and that during nearly the first half of the present century those who would not admit it to be a disease because it left no lesion in the body, were as ignorant of the subject as the ancients were, but without the same excuse for their ignorance. It appears further that they who ascribe our more accurate knowledge of the nature of asthma to the dis-

covery of the bronchial muscles by Reisseissen, or other cotemporary anatomists, are but imperfectly acquainted with the literary history of asthmatic affections.

It is unnecessary to enumerate the names of all among more recent pathologists who have taught the doctrine that nervous asthma depends on bronchial spasm. But some of them may be referred to. Laennec (ii. 179) says:—

"When full inspirations are inadequate to make the air reach the pulmonary vesicles, the fact can be attributed only to a *spasm of the vesicles themselves*, or, at least, of the small bronchial ramifications."

The same doctrine is maintained by Georget, Lefévre, Copland, Wunderlich, Grisolle, Romberg, Trousseau, Walshe, and all others whose conclusions are authoritative.

It may be proper to mention that Dr. Budd (*Med.-Chir. Trans.*, xxiii. 62) and Dr. Kidd (*Dub. Quar.*, May, 1861, p. 296) attribute the phenomena of asthma to spasm, indeed, but spasm of the *external* muscles of respiration. It is sufficient to reply that the *external* muscles are not in a state of sustained spasmodic action in this disease, and except in tetanus they never are. In a word their contraction during the asthmatic paroxysm is voluntary and intermittent, while the dyspnœa is sustained and more or less permanent, and such as would be occasioned by involuntary muscles in spasmodic action.

As we have seen, among the objectors to the theory of bronchial spasm is Dr. Budd. He details some experiments with the galvanic apparatus applied to different portions of the air tubes, and declares that no contraction can be produced by its means either in the bronchial tubes or in the trachea. He also quotes the experiments of WEDEMEYER to the same purpose. But, evidently, by provin[illegible] too much they prove nothing. For the merest tyro in anatomy can demonstrate the muscularity of the trachea.

But it has been conclusively shown by the microscope and by physiological experiment that the bronchia are provided with muscular and contractile fibres. LONGET (*Physiol.*, i. 646, 1859), after detailing some experiments with the galvanic current on the pneumogastric nerves, and referring to the investigations of KÖLLIKER and MOLESCHOTT, concludes not only as to the certainty of the existence of muscular fibres in the minutest bronchia, but also as to the probability of their presence in the vesicular structure. He even maintains that such a supposition is necessary; for the act of expiration, either by the relaxation of the inspiratory muscles alone, or also with the active co-operation of the external expiratory muscles, would be unable to expel the mucus or even the foul air contained in the ultimate bronchia. Consequently, he argues, these bronchial and vesicular muscles are essential to the renewal of the air, to the permeability of the bronchia, and the maintenance of the respiratory function.

Quite recently Dr. RADCLIFFE HALL, (*Braith. Retros.*, xlv. 76), without apparently being acquainted with LONGET'S argument, says:—

"The smallest bronchial tubes are the most muscular;" ..... "they contract rhythmically in quiet normal respiration, and by so doing quicken the expulsion of foul air from the air-cells, and accommodate the size of the tubes to the lessening bulk of the lungs."

He also holds that they contract partially towards the close of the inspiratory act, completing the propulsion of the air to the vesicles which the external muscles had begun, just as the capillary arteries by their own con-

tractility propel the blood further which they received from the action of the heart and larger arteries.

It is no objection to this view that it implies a power in the minute bronchia of propulsion in either direction. A similar power is exerted by the stomach in ordinary vomiting, and by the small intestine when the vomiting is stercoraceous; also by the urethral muscles when they draw into the bladder foreign bodies placed in the urethra, and even by the vagina and uterus when they carry the seminal fluid to the ovaria.

Let it be added, however, that the doctrine of Dr. R. Hall, however original, is not new; it dates really from the last century.

In 1751 Whytt (*On the Vital and Involuntary Motions of Animals*, p. 170), speaking of the active agents in respiration, said: "The muscular fibres of the bronchia, by their contractile power, contribute to the expulsion of the air out of the lungs."

To return from this digression. Dr. Salter continues his demonstration by showing "that the phenomena of asthma are those of excito-motory or reflex action." Often they are developed by a mechanism similar to that which excites cough, the presence of some offending agent in the bronchia themselves, as various effluvia, dust, and other minute particles; more frequently gastric impressions made by irritating or too abundant food; sometimes by accumulated fecal matter; occasionally by a remoter impression still, as in a case where the attacks were brought on by the application of cold to the instep. In some rare instances the source of irritation producing the paroxysm appears to be central, as when an attack has preceded brain disease, or has taken the place of habitual epileptiform convulsions. Cases in which the cause of the attack is mental are evidently of central origin. Much importance is attached by the author to the *humoral* source of the paroxysms in numerous cases. Besides the reflex operation of gastric irritants through the pneumogastric nerve, the direct action upon the nerves of the lung by the products of digestion is, in his opinion, to be charged with producing asthmatic attacks. In many instances this effect appears to result, not from any intrinsically noxious quality of the articles of food employed, but to a special susceptibility to be influenced by some which are in themselves perfectly wholesome. The same peculiarity, it has already been stated, is noticeable in regard to effluvia. The articles of food which are prone to produce these effects are, in general, such as are crude and indigestible, among which may be mentioned cheese, nuts, raisins, confectionery, salted and highly seasoned food, and fermented drinks. Dr. Salter meets the very natural objection that these ingesta may occasion asthma by a reflex and not by a direct action on the lungs, by stating that they induce asthma in just such time as they would take to reach the lungs subsequent to their absorption, and that, as a general rule, in persons afflicted with an appropriate susceptibility, the rapidity with which the attack comes on depends upon the facility with which the particular article of food is absorbed. Thus, in a case which is referred to, the attack always followed immediately after taking wine or any alcoholic drink; while in another the food producing asthma was such as would furnish material for lacteal absorption, and the attack did not come on until two hours after the food was taken. In spite of these cases, the author is careful not to insist too strongly on the humoral origin of asthmatic attacks, remembering how often the susceptibility in question is associated with unquestionable dyspeptic disorder.

We cannot better conclude our notice of this portion of Dr. Salter's

Essay than by stating, in the author's own words, the connection between the muscularity of the bronchial tubes and the phenomena of asthma.

"The purpose of this muscular furniture of the bronchial tubes is," he remarks, "that they should contract under certain circumstances, and on the application of certain stimuli; and seen by this light we recognize in asthma merely a morbid activity—an excess—of this natural endowment; the tubes fall into a state of contraction with a proneness, a readiness, that is morbid; the slightest thing will throw them into a state of spasm, the irritability of the muscles is exalted, the contraction violent and protracted, that becomes a stimulus to contraction which should not be, and the nervous and muscular system of the lungs is brought within the range of sources of irritation applied to such distant parts as ordinarily in no way affect them. Any healthy man may have his bronchial tubes temporarily thrown into a state of asthmatic spasm by the inhalation of ammoniacal or carburetted or other irritating gases; but only by such materials whose exclusion is necessary for the safety of the lungs, will this natural asthma be brought about. A greater degree of bronchial sensibility is shown in those cases, by no means uncommon, of what is called 'hay-asthma,' in which the stimulus to bronchial spasm is the effluvium of hay; a still greater, in those cases, much rarer, in which the emanations from ipecacuan powder will at once give rise to asthma; a still greater in that numerous class of cases of asthma in which the disease is called into activity by certain atmospheric peculiarities which are altogether inappreciable, as where an attack of asthma is inevitably brought on by going to a certain place, living in a certain house, sleeping in a certain room. All these cases fall strictly under what we may call the formula of health; they are physiological; they are instances of the contraction of a muscular tube in obedience to stimulus applied to the mucous membrane that lines that tube; the nervous system engaged is the *intrinsic* nervous system of the tubes, its own ganglia and perceptive and motor filaments, in the same way as in œsophageal deglutition or intestinal peristaltis; the error is merely a morbid exaltation of a normal irritability. But there are other cases in which the error is more than this, in which the nervous apparatus involved in the phenomena is abnormally extended; in which certain outlying and distant parts of the nervous system are the recipients of the stimuli that give rise to bronchial spasm, as in those cases to which I have referred, where an attack is induced by an error in diet, a loaded rectum, the application of cold to the instep, mental emotion; in which the gastric filaments of the pneumogastric nerves, the sympathetic, the cutaneous nerves of the foot and the brain, are respectively the recipients of the stimulus that gives rise to the bronchial contraction. In the former class of cases the bronchial spasm takes place in obedience to the wrong stimulus applied to the right place; in the latter, place and stimulus are alike wrong. . . . In what, then, does the peculiarity of the asthmatic essentially consist? Manifestly, in a morbid proclivity of the musculo-nervous system of his bronchial tubes to be thrown into a state of activity; the stimulus may be either immediately or remotely applied, but in either case would not normally be attended by any such result. There is no peculiarity in the stimulus; . . . nor, probably, is there any peculiarity in the irritability of the bronchial muscle; the peculiarity is confined to the link that connects these two—the nervous system, and consists in its perverted sensibility, in its receiving and transmitting on the muscle, as a stimulus to contraction, that of which it should take no cognizance. . . . These considerations, I think, tend to rationalize our notions of asthma, and to impart at once an interest and an order to its phenomena."

The clinical history of asthma is very fully related by our author, and in very graphic language, but our limits will not admit of any extracts. Among other things, he dwells upon the fact that the attacks so generally commence between three and six o'clock in the morning, illustrating the supremacy obtained by the excito-motory functions during the suspension of the will by sleep. He elsewhere (p. 178) points out the degree to

which sleep exalts nervous action. He has omitted noticing, however, one of the most familiar examples from this class of facts, the occurrence of spasmodic croup uniformly at night, and its limitation to certain families or to individual members of such families, proving that in this disease, as in asthma, a special susceptibility is usually necessary to bring on an attack. Occasional exceptions to the law of nocturnal occurrence of the paroxysms are met with. M. Trousseau mentions one in which the attacks came on uniformly at eight o'clock in the morning, and Dr. Salter relates the singular case of a night porter who slept only by day, but who, nevertheless, had his fits of asthma about five or six in the morning when he was up and awake.

Dr. SALTER offers some remarks in regard to the capacity of the chest during the paroxysm, which have induced us to make it the subject of a little comparative analysis. His statement is as follows (p. 75):—

"One result of the straining efforts to fill the chest is a permanent distension of it—its walls are kept fixed *in a condition of extreme inspiration.* So great is *the enlargement of the chest during the paroxysm*, that any article of dress that would ordinarily fit the waist cannot be brought together by two inches. But the chest is enlarged in every other way, the diaphragm therefore descends, the abdomen therefore seems fuller, and its girth is increased."

One of the most eminent of German physicians, WUNDERLICH, makes a somewhat similar statement, as follows:—

"One form of asthma consists in a gradual augmentation of the dyspnœa, which reaches its maximum *at the end of two or three days. At this stage* the chest is almost motionless in spite of the most violent muscular efforts; the respiration rises to 60 or 80 in a minute, but is short and gasping; coarse sibilant and sonorous rhonchi are heard all over the lungs, the percussion *resonance is everywhere preserved*, and after many hours the limits of the chest are extended downwards. The liver also descends, the heart is thrust into the epigastrium, and *the thorax is excessively distended.*" (*Pathologie*, iii. 316.)

GRISOLLE (*Pathol. int.* ii. 745) says, "during the paroxysm the chest *is resonant*, often unnaturally so."

Dr. KIDD, also (*Dublin Quar.*, May, '61, p. 202), intimates that authors who have made a contrary statement did not know by actual observation what they were talking about, and assures us of his belief that a contracted "state of the thorax never exists in spasmodic asthma." On the contrary, he remarks, "*the thorax is distended to its greatest extent* . . . . so as to produce great fulness of the abdomen, and cause the heart's impulse to be felt at the scrobiculus." "The great difficulty," he concludes, "*is to empty the chest.*"

It may appear singular that in regard to a point of simple ocular observation there should be a divergence of opinion amounting to contradiction among different medical writers upon the subject of asthma. It will not do, with Dr. Kidd, to say that successive writers have copied from one another. This may be true of certain among them who compiled what they read rather than described what they saw; but it will not apply to the greater number, from some of whom the following citations are made.

We have already seen that HOFFMANN declares the capacity of the chest to be contracted during the paroxysm.

LAENNEC (ii. 386) describes the percussion resonance as *very moderate* in many cases.

Dr. C. J. B. WILLIAMS, one of the first English followers of Laennec, says:—

"When bronchial spasm is considerable, the chest *may sound ill on percussion* . . . . . with a short, tight sound like that which the chest yields on forced expiration. This is caused by the *contracted state of the lungs* when under the influence of bronchial spasm." (Lib. Pract. Med., iii. 145.)

ROMBERG tells us (i. 328):—

"'The patient feels that the air *does not pass beyond* a certain point of his thorax.' When the attack ceases suddenly, 'the air rushes violently into the bronchi and pulmonary vesicles into which *it had previously been precluded from entering*, and a puerile murmur is produced.'"

LEBERT (ii. 38) says: "During the attack, *the percussion pitch is raised.*"

WALSHE (p. 424) declares that "there is little or *no true inspiratory expansion*," and "the resonance on percussion *is slightly impaired.*" Finally, not to multiply citations, Dr. FLINT (p. 397) makes the following explicit statement: "If emphysema be not present, the volume of the lungs may be reduced by the expiratory efforts so as to diminish appreciably the clearness on percussion."

These authors are all original observers, and of the first rank, and yet they agree in making statements to which that of Salter, Wunderlich, Grisolle, and Kidd are diametrically opposed. Now, it would seem almost certain that on the one side or the other, there had either been an error of observation, or in the statement of its results. On the one hand, increased percussion resonance has certainly existed, but on the other hand, in a different set of cases, it has not been present. The passage that has been quoted above from Wunderlich probably explains in some degree this contrariety of statements. This author mentions that after *two or three days* of asthma distention of the thorax is observed. The persistent and prolonged struggle to inspire air tends, by straining the pulmonary tissue, to dilate the vesicles and expand the chest; and, however ineffectual this effort to inspire may be at the commencement of the paroxysm, successive repetitions of the act may add to the amount of air locked up, and, if the attack be a long one, gradually distend the lungs and render the chest resonant upon percussion, where it had previously exhibited diminished resonance. If, then, there are any cases in which at the commencement of a paroxysm the percussion resonance is unnaturally great, there would seem to be a strong probability that they present the complication of emphysema; and if this supposition is correct, *dilatation of the chest is not a characteristic symptom of pure nervous asthma.*

That it *is* probably correct may be inferred from the extreme rarity of *pure* nervous asthma. It is, in fact, one of the rarest among diseases of the lungs. Thus, LAENNEC (*op. cit.*, p. 385) declares—

"I have found evidence of pulmonary spasm in a very small proportion of asthmatic patients independently of all complication with pulmonary catarrh. Nevertheless, I am able to affirm that this condition exists."

WUNDERLICH informs us (*op. cit.*, p. 312) that, in the course of six years, he found but three cases of it among ten thousand clinical patients.

VALLEIX (*Guide du Méd.*, ii. 562) remarks that, "in the Parisian hospitals, where pulmonary diseases are so carefully studied, cases of nervous asthma are almost never met with."

SANDRAS, in his treatise on Nervous Diseases (ii. 148), after describing some cases of the affection, says: "These exceptional cases constitute nervous asthma."

And, finally, Dr. SALTER, himself, remarks:—

"Cases of *perfectly pure* asthma, that is, without the slightest organic complication, are, however, rare, unless they have existed a very short time, and for this reason—that asthma, if it is at all severe and its attacks frequent, *cannot long exist without inflicting permanent injury on the lungs, and even on the heart.*"

We cannot follow Dr. Salter in his further analysis of the phenomena of the asthmatic paroxysm, but merely remark that it displays, like the rest of his pathological disquisitions, great familiarity with the phenomena of the disease and accurate reasoning from them. Nor can we dwell upon his interesting illustrations of the periodicity of the attacks.

We merely note, in passing, his statement, that their diurnal occurrence furnishes good grounds for suspecting that they rest upon an organic basis, and also his confirmation of the general testimony of authors that the attacks are more frequent in summer than in winter. The periodicity of asthma, he remarks, is of two kinds; that which depends upon the periodical recurrence of its evident exciting cause, and that which appears to be intrinsic, or, in other words, independent of external circumstances.

It appears, as indeed seems but natural, that the cases which come on in youth and in early manhood, are generally specimens of the pure spasmodic form without organic complication, and, moreover, that they are usually examples of the hereditary transmission of the affection. According to Dr. Salter's observation, twice as many males have asthma as females. We notice that Frank gives the proportion as much larger, viz., as six to one.

The immediate or exciting causes of asthmatic attacks, are generally direct irritants inspired; alimentary irritants; remote sources of nervous irritation, and psychical irritants. Examples of each of these will occur to every reader. The essential causes, our author concludes, may be organic lesions, perhaps inappreciable, either in the bronchial tubes or in some part physiologically connected with them; or else, may consist of some congenital, possibly inherited, peculiarity of constitution, whose nature it is not possible for us at present to apprehend. It may be urged, we think, that an "inappreciable organic lesion" is, practically, something difficult to distinguish from an "idiosyncrasy." It is easy to believe that a certain palpable lesion or peculiar organic condition may be an efficient cause of asthma; but if a lesion ceases to be appreciable, it also ceases to give proof that it exists. In the illustrations adduced by the author, the existence of a lesion is inferred, but not proved.

Although asthma never kills, it may, according to our author, produce certain organic changes in the heart and lungs which ultimately prove fatal. Repeated paroxysms may occasion hypertrophy of the bronchial muscles, and thus diminish the calibre of the tubes, and the bronchitis which so generally complicates the spasmodic affection must still further lessen the supply of air in respiration. It is also remarked, that the greater or less degree of asphyxia existing during the paroxysm shows that the pulmonary circulation is overloaded; serous effusion takes place constituting œdema of the lungs, and the right side of the heart becomes dilated and hypertrophied. Associated with or following these effects emphysema is developed. This last result is ascribed to the strain upon those pulmonary lobules to which the air has access, while the rest are closed by spasm or obstructed with mucus. It is to be observed that all the elements here referred to, except bronchial spasm, are characteristic not of asthma but of

emphysema following or accompanying bronchitis independently of any asthmatic complication. To explain through them the development of emphysema in asthmatic persons, is clearly to interpolate causes with which asthma has no necessary connection, and which of themselves are quite sufficient to develope emphysema of the lungs, if an organic predisposition to that disease exists. It is true, that Dr. Salter speaks of having "seen emphysema developed in a case of asthma in which bronchitis never existed." Yet it is certain that the latter disease is not unfrequently the precursor of emphysema, while pure asthma is very rarely, if ever so; hence, we cannot admit any direct causative connection between the nervous and the organic affection. But, still further than this, emphysema is by no means confined to cases in which either asthma, or bronchitis, or heart disease, has previously existed; it more frequently arises spontaneously. This is a fact long ago insisted upon by Louis, who, as well as other writers, has also shown that the disease is very often hereditary, and independent of all exciting causes, and particularly of pulmonary catarrh. It would appear most probable that emphysema is produced by organic conditions involving a diminution of muscular power rather than an excess of it; first, because it oftenest arises without any strain from cough or dyspnœa; and secondly, because, when bronchitis precedes it, the mucous and muscular coats of the bronchia must lose contractile power instead of gaining it. It is also important to remark that emphysema could not be produced by asthma unless the habitual state of the lungs during the paroxysm were one of extreme distention. So long as the chest remains contracted, the strain upon the vesicles, far from being increased, is really less than usual; and it is only towards the end of prolonged paroxysms that the vesicular structure can become dilated. We have endeavoured to prove that constriction, and not expansion, is the ordinary state of the chest during the attack, and the bearing of this proposition upon the relation of emphysema to asthma, will be now apparent.

In considering the treatment of asthma, Dr. Salter first mentions the depressants ipecacuanha, tartar emetic, and tobacco, of which he regards the last as the most speedy and effectual. They afford relief by relaxing the bronchial spasm, and terminating it by reducing the power which generates it. Stimulants, on the other hand, put an end to the attack by exalting the nervous energy above the point at which the reflex susceptibility, on which the spasm depends, has a tendency to display its power in producing muscular contraction. That involuntary and spasmodic muscular action has a peculiar tendency to take place during sleep, the time when the asthmatic paroxysm usually occurs, has already been referred to as a physiological fact. Hence we may explain the usefulness of coffee, tea, alcohol, ammonia, cannabis, ether, and other nervous stimulants in preventing the attacks. Of these, the most favourable judgment is given for coffee. Under the title of "sedatives," as distinguished from "depressants," the author refers again to tobacco, Indian hemp, opium, and stramonium. Undoubtedly these medicines are sedatives of abnormal nervous action, but, except in poisonous doses, they are stimulants, and, in virtue of their stimulant action, assuage morbid nervous action precisely as alcohol allays the "horrors" of the drunkard, or quiets the jactitation, subsultus, and tremors of typhus fever.

Chloroform belongs to the same category. It is by its primary and stimulant operation, and when it is administered in small doses, that it so marvellously arrests the paroxysm of nervous asthma. A case is mentioned by Dr. S. in which a few whiffs of chloroform sufficed to afford relief, and, before insensibility was produced, the breathing was free. Where a marked

bronchitic affection exists, the full influence of the medicine would manifestly be dangerous. Objection is made to the use of opium in this disease, and we think with reason. Its stimulant operation can scarcely be obtained without being speedily followed by its narcotic action, and this tends to embarrass rather than to relieve the respiratory organs. In the use of stramonium, the author does not appear to have had much experience, nor to have formed as high an estimate of its virtues as they deserve. Of lobelia, he confesses that he has nothing to say; and the little that he says of sulphuric ether is unfavourable. The inhalation of the fumes of burning nitre paper is a method not, indeed, originating with himself,[1] but one more fully tested by him than by any person who has published his experience in the treatment of asthma. It is evidently his favourite remedy. Its value, he remarks, is in proportion to the purity of the asthma; that is to say, its freedom from organic complications. It was of little use, he found, when the case was complicated with bronchitis. He advises the following mode of preparing and using it:—

"Dissolve four ounces of saltpetre in half a pint of boiling water; pour the liquor into a small waiter, just wide enough to take the paper; then draw it through the liquor and dry it by the fire; cut it into pieces about four inches square, and burn one or two pieces in the bedroom on retiring to rest at bedtime."

The paper should be unsized, porous, and not containing wool. Red blotting-paper, of moderate substance, is recommended.

Dr. Salter lays down the proposition that asthmatics are generally dyspeptics in a greater or less degree, and furnishes some illustrations of the influence exercised by a disordered stomach upon the recurrence of the attacks, and especially of the mischief occasioned by late and abundant dinners. In this connection, he reminds us again of the greater liability which exists during sleep to all excito-motory impressions, and especially to those which originate in the stomach. All of his precepts are sound, and they possess, what should have been more distinctly recognized, the sanction of long and universal experience. Floyer, in his chapter on this subject, says emphatically: "Asthmatics are best fasting, and under very frugal and simple diet."

One of the most interesting chapters of the present treatise is "On the Therapeutical Influence of Locality." It is there shown by a number of cases that a very large proportion of the asthmatics who come from the country to London are relieved during their residence in that city. The most general principles, or rules rather, which he believes to be deducible from experience in this matter are—

"That the localities that are the most beneficial to the largest number of cases are large, populous, and smoky cities;" and "that the worse the air for the general health, the better, as a rule, for asthma; thus, the worst part of cities are the best, and conversely."

To these rules, however, the exceptions are numerous, and it is no

[1] The first published account of this treatment that we have met with is contained in the *New York Med. Gaz.*, i. 375. It was copied into this Journal (Jan. 1842, p. 262), and the editor subjoins: "We can add our testimony to the utility, in some cases, of this remedy. We have several times prescribed it, and in some instances the relief it afforded seemed almost magical; in others, however, it entirely failed." A subsequent reference to the medicine is contained in the *London Lancet*, 1845, i. 383, and ascribes the writer's knowledge of the remedy to a paragraph accidentally seen in a newspaper.

uncommon thing to find that a particular locality as certainly prevents the paroxysms in one person as it excites them in another. Floyer suffered asthma from childhood until he went from his home in Staffordshire to Oxford, where he resided for twelve years without any considerable fit. He also remarked the greater immunity of asthmatics from their fits in towns, but thought them more severe when they did happen. A similar result of his own observation is given by Trousseau. We believe that the rule also holds in this country. Upon this subject we need make no apology for quoting the following passage from the writings of one of our most sagacious and experienced physicians, the late Professor Chapman :—

"The pure air of the country, especially in elevated positions, I have found, with very few exceptions, more pernicious than that of cities, and even the suburbs of these less propitious than the central and populous parts. Many instances have come under my own view of persons affected in this way, who, very comfortable in the latter, were rendered otherwise in the former situation, among which is that of a friend of mine who can seldom walk to the edge of the city with impunity, and never goes into the country without an attack. It sometimes happens, too, that individuals may spend the day comfortably in any rural position, though on the approach of evening they are unavoidably seized. Three or four instances of the kind I have known, and of which there is now living in Baltimore a gentleman by whom I am informed the fact is strikingly illustrated in himself. Close to the town he owns a villa remarkable for its general healthiness, at which he has not slept for many years on this account—escaping, however, all intimations of an attack during the day." (*Lectures on the Diseases of the Thoracic and Abdominal Viscera*, 1844.)

The beneficial influence of sustained bodily exertion is insisted upon very strongly by our author. This, too, is held by Floyer to be an essential part of the treatment, for he assures us that "they who use no exercise in the intervals of the fits soon fall into cachexias, lethargies," &c.; and he advises "riding, sawing, bowling, ringing of a dumb-bell," &c. The avoidance of cold and dampness, and especially of the breathing of damp cold air, is very properly dwelt upon by Dr. Salter as closing one of the principal avenues through which attacks of the disease come on.

By a singular oversight, the author states that he is not sure that the inhalation of oxygen gas has ever been tried. Its use in asthma by Hill, in 1800, is mentioned in so familiar a text-book as Pereira's *Materia Medica;* it had still earlier been recommended by Beddoes and Watt in their treatise on *Factitious Airs;* Chaptal and also Fourcroy tried it in asthma; the authors of the *Compendium de Médecine Pratique* remark that "this agent, which, on theoretical grounds, should have been very efficacious, has not fulfilled the hopes which were entertained of it," and the late Dr. Chapman said of it, "it is dead, and gone to the 'tomb of all the Capulets.'"

The prognosis in spasmodic asthma is, according to Dr. Salter, generally favourable in young patients, but it grows less favourable with advancing age. It need scarcely be added that the prospect of recovery is very much clouded by the presence of any permanent complication either of the lungs or heart. The length of the attacks, their frequency, the rapidity and completeness of recovery from them, their tendency to increase or diminish in number, and the possibility of discovering their immediate exciting causes, are all to be taken into the account, precisely as they should be in any other spasmodic disease.

From the preceding survey, the reader may be enabled to form some idea of the substance and manner of Dr. Salter's treatise, but not such an one as to dispense him from the obligation, or to tempt him from the pleasure,

of studying the original. It abounds in the fruits of original observation; its descriptions are full and lifelike; its reasoning is, for the most part, cogent and satisfactory; and its style is remarkably fresh, sprightly, and clear. If a second edition should be published, we shall hope to find in it more frequently due credit given to the older writers for the essential agreement of their views with those which Dr. Salter has so fully and perspicuously expressed. A. S.

ART. XVII.—*General Report of the Commission appointed for Improving the Sanitary Condition of Barracks and Hospitals.* (Presented to both Houses of Parliament by command of Her Majesty. 1861.)

A RECENT report of a royal commission on the sanitary state of the army having shown that the annual deaths among all arms on home stations had reached the great height of 17.5 per 1000, whereas the mortality among males of the same ages, in the town and country population of England and Wales, was at the same time only 9.2 per 1000 (little more than one-half), another commission was appointed by the Secretary of War, consisting of Dr. John Sutherland, W. H. Burrell, and Douglas Galton, engineers, to inquire into the causes of this excessive death-rate, and to devise means for their removal.

For this purpose, they were commanded to "examine and inquire into the sanitary condition of all barracks and military hospitals in the United Kingdom, as regards their position, neighbourhood, construction, drainage, water supply, lavatories, laundries, baths, kitchens, water-closets, latrine arrangements, urinals, means of ventilation, lighting and warming, both by day and by night, the dimensions of the barrack-rooms and sick wards, the arrangements of, and the distance between, the beds, the supply of bedding and utensils, the amount of cubic space per bed in barracks and hospitals, the state of repair of the buildings, the condition as to cleanliness of wards, barrack-rooms, and other buildings, and of their vicinity; and into all other matters connected with the buildings which, in your opinion, may be prejudicial to the health of the soldier."

In addition to this important inquiry, the commission were enjoined to "devise the necessary works and measures required for removing defects in the drainage, for the abolition of cesspools, for the formation of improved drainage, for improvements in water-closets, latrines, and urinals, for providing lavatories, baths, and laundries, for thoroughly and efficiently ventilating all barrack-rooms, wards, and day-rooms, for warming and lighting by day and night, and for improving the kitchens in all barracks and hospitals."

They were further instructed to allot, whenever practicable, in *barracks* and *guard-rooms*, not less than 600 cubic feet to each man, and three feet to intervene between every two beds; while in *hospitals*, 1200 cubic feet were to be allowed for each bed, four feet between the sides of the beds, and twelve feet from foot to foot, when practicable.

These instructions, thorough and minute in every hygienic particular, were coupled with authority to expend a sum not exceeding £100 for each hospital or barrack so inspected; and, whenever that sum was insufficient,

they were to make estimates and plans, to be submitted to the proper department for examination and allowance.

With these very liberal and praiseworthy powers, the commission immediately proceeded to the work, and the result of their labours is exhibited in the book before us.

The total number of barracks in the United Kingdom, to which their inquiry referred, amounts to 243, of which 162 were personally examined and reported for improvements; of hospitals, there are 167, of which 114 were personally inspected and reported on. The remaining barracks (81) and hospitals (53) are nearly all small, with accommodations for few men only; the inspection of and report upon these were left to a subsequent period, in order not to delay the improvements which were found to be greatly needed in the larger and more important places. A general remark made by the commission, with reference to the financial limit to which they were restricted in executing sanitary improvements, is worthy of note, as one which might have been expected after the statement of the great mortality of the army at home in a time of peace.

"The amount of funds placed at our disposal—namely, £100 per barrack—was found to be totally inadequate even for the more urgent sanitary works, because, although large sums of money have been from time to time spent on these barracks and hospitals, *a very small portion of it appears to have been devoted to sanitary purposes.* So far, indeed, as concerns the health of the troops, almost every barrack and hospital we have visited can be considered in no other light than as *never having been completed.* * * * * In every instance, therefore, we have been under the necessity of having estimates prepared for sanitary works."

Such is the care which the government of Great Britain has been wont to bestow upon its immediate dependents—an almost total neglect of, next to feeding and clothing, the first essentials of health and life; and the consequence has been a mortality nearly double that which the men would have experienced had they remained civilians, and pursued their ordinary industrial avocations. An analysis of the diseases which led to this high rate of mortality demonstrated that the excess of deaths was due almost entirely to zymotic diseases, such as fevers, cholera, diarrhœa, and to chest and tubercular diseases, such as consumption, &c. Seven-ninths of the entire mortality among the infantry of the line were found to arise from these two classes of diseases; and, for each class, the mortality among the infantry was shown to be *more than double* what it is among males of the same ages in civil life. Can any circumstance be mentioned more damaging to the character of the English government for humanity and common sense?

Nor can we be surprised at this result, when we have learned the details of the unsanitary condition of these homes of the soldier, as they are set forth in this interesting volume. With regard to the *position and neighbourhood of barracks*, the whole number is divisible into two classes. 1st. Those which are situated in the suburbs of towns, in positions hardly any of which can be said to be unhealthy, while very many of them cannot be described as otherwise than healthy; sometimes elevated above the neighbouring levels, with sufficient fall for drainage; sometimes occupying lofty eminences, fully exposed to the winds. This class, it is said, comprises by far the greater number of barracks inspected. The 2d class consists of those situated in or near densely-populated neighbourhoods, and closely surrounded by dwellings of the civil population. Of these, several instances

are quoted; some inclosed within lofty walls in such a manner as to keep the air about them stagnant at all ordinary times. Portman Barrack, for example, "is a closed square of two-story buildings, with regulation space for 483 men, surrounded on all sides by higher walls," and having within cubic space for only 276, or a little more than one-half the required amount.

"Not unfrequently, barrack-rooms are built close to the privies of adjoining houses, and nuisance is experienced in the barrack-rooms." "Ship Street Barrack, Dublin, overlooks a street of filthy houses, behind which pigs are kept, and nuisance is experienced when the sties are cleaned." "Piershill Barrack and hospital, near Edinburgh, is in an open situation, but in the immediate vicinity of meadows irrigated by the sewage of the town." "Tilbury Fort is surrounded by a wet, undrained, marshy district of country, particularly exposed to malaria; and, whenever it is occupied, a large proportion of the men are sure to find their way into hospital from intermittent fever."

As a striking instance of the influence exerted upon the health of the soldier (as well as of all other people) by the locality of their residence, the contrast is drawn between the average mortality of all arms, previous to 1853—which, as already stated, was 17.5 per 1000 per annum—and that at Aldershot and Shorncliffe, where the troops were encamped in an open country. In the three years ending Dec. 31, 1859, the mortality among them was only 4.7 per 1000 per annum—about one-quarter.

The *construction of barracks* next claims attention, and in this respect it is stated that they exhibited great diversity of plan, and still greater diversity in internal arrangements and proportions. While some of the plans, especially those of certain Irish barracks, are good, convenient, and well adapted to health, "of the great majority, the plans are very indifferent, and there are not a few of which the plans or construction, or both, are essentially bad." The attributes of a healthy barrack appear hardly to have been considered; facility of supervision and of discipline, and the amount and shape of the ground at the disposal of the architect, seeming to be the only guides in their arrangement, and, what is more remarkable still, "the best barracks are not those of recent construction, but are found among the Irish barracks built in the end of the last century or early in the present one."

As a specimen of defective arrangement, a figure of the ground-plan of Hyde Park Cavalry Barracks is given. These were

"Constructed to accommodate 536 non-commissioned officers and men, with a proportionate number of horses, on a long strip of ground 3 acres, 2 roods, 35 perches in extent. The buildings for men and horses are crowded into three acres of the area, which, if the barracks were fully occupied, would equal a density of population of 114,560 to the square mile, exclusive of women, and children, and horses. The actual number in barracks when we inspected them was 385, besides women and children. The situation towards the park is open; but it will be seen that there are fourteen blocks of buildings on the ground, *so disposed as effectually to cut off free air currents from the square.* There are no back premises, and the litter and manure are thrown out directly under the windows of the barrack-rooms and of the corridors giving access to them. The rooms are over the troop stables, and the whole place smells of ammonia."

It would have been particularly instructive to know the mortality among the occupants of the Hyde Park Barracks, thus conducted, in the very heart of London; but it does not appear to be given in the report.

Equally bad, in point of arrangement of buildings and over-crowding, were the Wellington Barracks. Of the seven acres and over of ground pertaining thereto, three are covered with large blocks of buildings, con-

taining regulation space for 1530 non-commissioned officers and men, giving a density of 326,000 inhabitants per square mile, for the built area, being nearly double that of East London, which is one of the most densely populated town districts in England. The great defect in this instance, as in many others named, is in the buildings being so arranged, with regard to each other, as to prevent the free circulation of air around, among, and through them.

Crowding buildings together, placing them in hollow squares, or with narrow dark lanes between lofty three or four-story buildings, without any outlet to prevent stagnation of air, with the ground rising rapidly behind them; placing the men's rooms immediately over the stables, with the smell of the privies constantly pervading the kitchens; destitution of sufficient light and ventilation; without adequate means of cleanliness—such is the external manner of the buildings in which, to a large extent, the army of England has been kept, according to the report of her own examiners. The internal arrangements, as from this may be readily supposed, are equally insalubrious: as, for example, placing barrack-rooms back to back, with windows only on one side, and no thorough draft; constructing barrack-rooms over stables; providing means of access to the rooms by long internal corridors, or by corridors covering one side of the rooms; providing accommodation for non-commissioned officers by wooden bunks inside the men's rooms, so as to obstruct light and ventilation; omitting to provide proper staircases, and taking space for stairs out of the barrack-rooms; using basements for barracks, &c. &c.

"Errors in plan and construction, similar to those enumerated above, exist to a greater or less degree in the majority of the barracks we have visited, but they are to be seen in the most aggravated form in buildings which have not been originally erected as barracks, but have been adapted to that object."

"Arbour Hill Barrack, Dublin, was once a prison, and, as such, was not fit for prisoners. It is now a barrack for 91 men. If it were proposed to restore it to its former use, no inspector of prisons would be justified in sanctioning it."

Another similar instance is mentioned of an old French prison at Cork, and several of the conversion of factories, shops, castle halls, combining all the evils imaginable as dwellings.

Such, in brief, was the lamentably unwholesome condition of the Soldiers' Homes of one of the most aristocratic nations of the earth in the nineteenth century, when this commission probed the evils to the bottom, and set about the necessary reform. This, under the liberal powers granted them, they appear to have done thoroughly and scientifically. Everything that can influence the sanitary condition of the barracks and hospitals has received their minute and particular attention, even to the nature and colour of the material best adapted for wall and ceilings. In fact, every hospital government, and every architect, may study the principles of construction and arrangement, laid down in this volume, with advantage. Never before has such a sanitary work been carried on to such an extent, and the one hundred neat and well explained figures, illustrating the defective plans and those approved and adopted by the commission, give abundant facilities for the thorough understanding of the text. In fact, the report is a thorough exposition of the true principles which should be put in practice in military barracks and hospitals everywhere, and a chapter on the "General Sanitary Principles applicable to the Arrangement and Construction of Fixed Camps," is also given.

To the subject of *Ventilation of Barracks* the commission appear to

have given a large portion of their consideration, as its great importance demanded, and the report contains a very minute and intelligent account both of the theories adopted and the plans executed for the purpose. We should like to give our readers the benefit of the whole of this part of the report for the double purpose of showing that a familiarity with this topic, both in philosophy and practice, in a medical man, is not only not beneath his dignity, but that without it, he is but half prepared for the discharge of his professional duties. We are able, at present, however, to give only the following quotations and descriptions. A discussion of the methods of *Ventilation by Propulsion*, by means of the fan, the screw, and the pump, is followed by illustrated descriptions of five several modifications of ventilating apparatus which were seen in operation by them—viz., Arnott's chimney valve; Sherringham's iron air-brick, or box, communicating directly with the external air; Watson's & Mackinnell's double current tubes; and Muir's square tube, divided into four parts. These are all regarded as having special advantages in certain cases, chiefly guard-rooms, but they were found inapplicable to barracks and hospitals, as not complying with all the requisitions of volume, variety of situation, avoidance of cold currents, &c.

"The following is the problem requiring to be solved in ventilating a barrack: *In a building consisting of a number of rooms, generally entered from common passages or staircases, sometimes directly from the outer air, and each having an open fireplace, which it is essential in every instance to retain, how to supply at all seasons and temperatures, and by day and night, each room by itself, and independently of every other room, with a sufficiency of air to keep the room healthy, and at the same time to prevent the temperature from falling below what is required for the comfort of the men. To do this with the least possible interference with the structure of the rooms, on a plan not easily deranged, and at a minimum of cost?*

"The terms of this problem show at once the difficulties in the way of ventilating barracks. None of the methods we have seen in use afford anything like a solution of it, and we have had to consider the whole problem anew. We have endeavoured to solve it, and we believe we have succeeded in doing so to an extent sufficient for all practical purposes.

"*Amount of Fresh Air per Man required.*—We began the work by endeavouring to ascertain approximately the amount of fresh air required to keep a sleeping-room healthy. Various attempts have been made at different times to settle this amount scientifically, but nearly every experimenter has arrived at a different estimate of the quantity.

"These differences in opinion have arisen from not sufficiently considering the various offices, already mentioned, which fresh air has to perform in the ventilation of human dwellings, and from not looking at the practical rather than the scientific side of the question.

"One set of experimenters have based their calculations on the quantity of air required to dilute the carbonic acid, produced by respiration, down to the proportion in which that gas exists in the external atmosphere. Other experimenters have taken the amount of air required to dissolve the aqueous vapour escaping from the skin and lungs, and to diffuse it so as to raise the hygrometric state of the air to the same healthy standard as that of the outer atmosphere.

"The estimates are hence very various, and differ to the extent of two, three, or four times, as to the amount of air required for health; a difference which proves how little is yet known scientifically on the subject.

"The practical argument as to the amount of fresh air required to ventilate a room is, in our opinion, of far more weight than the scientific one. We find, for example, that nature has provided in the atmosphere unlimited extent and constant means of purification and of movement.

"The building of dwellings interferes with these natural conditions, by inclos-

ing air in confined spaces, saturating that air with impurities, and rendering it stagnant. It may be fairly argued, as indeed has been proved by experience, that those dwellings are the most healthy in which the natural conditions of the atmosphere are most perfectly preserved. Chemistry has told us distinctly enough that at least 200 cubic feet of air per hour is required by a human being, for the mere purposes of diluting the carbonic acid and water given off from the body to the same standard as they exist in the atmosphere itself. But chemistry takes no cognizance of those aerial poisons eliminated from the skin and lungs, and which in stagnant air are perfectly cognizable to the senses, even after the air has been diluted to the extent stated. Indeed, the object to be served by ventilation is, primarily, the dilution and removal of the poisonous exhalations, and if this be secured the carbonic acid and water will be removed at the same time.

"Few persons are, perhaps, aware that an ordinary barrack fireplace removes a much larger amount of air than is required merely to dilute the carbonic acid and water to a healthy standard. The quantity varies, of course, with the section, height, and temperature of the chimney flue, and also with the force and direction of the wind.

"The extremes may be practically assumed at from 6000 cubic feet per hour up to ten times that amount. A twelve-men room, affording 500 cubic feet per man, would, on the lowest estimate, have 500 cubic feet of air per man per hour supplied to it by the chimney draft alone; that is to say, the fire grate will insure a ventilation above twice as great as will fulfil the requirements of chemistry; and yet it has been ascertained by sufficient experience that rooms so ventilated are both offensive and unwholesome.

"The result is, no doubt, partly attributable to the point of the room from which the foul air is drawn; for, although carbonic acid, like every other gas, diffuses itself equally through the cubic contents of a room, those poisonous, organic compounds, to which we have referred, are detected by the senses most strongly near the ceilings of apartments, as, for instance, in the galleries of unventilated churches, theatres, &c.; so that in all rooms ventilated only by the fireplaces, there is a reservoir of foul air situated above the range of its ventilating power. The fireplace may be made an admirable adjunct to ventilation, but by itself it is certainly not sufficient for the purpose.

"The sense of smell affording the chief indication of the healthiness or unhealthiness of a room atmosphere, and differing as the delicacy of this sense does in different individuals, it is not, perhaps, possible to arrive at an absolute standard of ventilation; but in order to obtain some practical estimate of the quantity of air required to preserve the air of a barrack-room sufficiently pure, and of the size of shafts and inlets required to insure this amount, we had air-shafts having certain definite sections carried from the corners of the ceilings of twelve barrack-rooms, in the Wellington Barracks, up through the roof, so arranged that the apertures might be contracted, and the quantity of air passing up each shaft measured by a delicate anemometer constructed by Naumann, of Paris, for the express object.

"The measurements were taken at different periods, during several months, between two and five o'clock in the morning. The requisite observations of temperature without and within the rooms, and of the hygrometric state of the air, were also taken, and the sensible state of the room atmosphere was observed at the same time.

"From these observations, as well as from others which we have been enabled to make, we are of opinion that an estimate on which we based our first improvements in ventilation, is sufficiently near the truth for practical purposes. It is as follows: That in a barrack-room containing a number of men, at 600 cubic feet per man, the whole air of the room should be renewed at least twice in the hour. In other words, that each man should have in round numbers 1200 cubic feet of fresh air supplied to him per hour. Even this amount may not be sufficient to preserve a barrack-room entirely free of odour at all times and seasons; but the difficulties of a thorough solution of a problem where the conditions are so variable, have led us to adopt this as our unit of ventilation, while in the ventilating plans we have carried out, it is always possible to increase the

amount without difficulty. After our plans had been some time in operation, we were glad to learn, from a report on the warming and ventilation of dwellings, made to the General Board of Health by Messrs. Fairbairn, Glaisher and Wheatstone, that a similar unit, namely, from 15 to 20 cubic feet per man per minute, had been arrived at by these gentlemen. But while adopting this unit, we hold it at the same time to be an indispensable condition, that each man should have the amount of space, 600 cubic feet, recommended by the Royal Commission."

"*Principle of Ventilating Barrack Rooms.*—The next point is to determine what should be the principle of ventilation adopted. We have decided, after a careful consideration of the different methods which have been in use, to keep each barrack room independent of every other in respect to ventilation, and to depend for the movement of the air in barrack rooms upon the fire-place and upon the element of the difference of temperature between the air outside and the air within. According to the law of dilatation discovered by Dalton and Gay Lussac, atmospheric air, in the process of being heated from the freezing to the boiling point of water, increases in volume 0.375, or about $\frac{3}{8}$ of its original bulk, which gives a dilatation of a little more than 0.002 for every degree of Fahrenheit. If the air inside a room were 20° Fahr. warmer than the outside, the air in the room would be expanded to a twenty-fifth part more in bulk, and would be to that extent specifically lighter than the outside air. The colder air outside has thus a tendency to press upwards the warmer, expanded and lighter air within the barrack room, for which at present there is no outlet."

In accordance with the law here enunciated, each room was provided with a shaft whose sectional area was adjusted to its length and the number of inmates of the room. A more proper rule governing the dimensions of the shaft, would be the cubic space of the room; but this would answer only in cases in which the number of occupants would conform to the cubic area—a circumstance which was hoped for in the future.

In rooms on the top floor, shafts were recommended of a sectional area of one inch to every fifty cubic feet of room space; for floors next below the upper, one inch to every fifty-five feet, and in barracks of three floors, an area of one inch to sixty feet was required for the lowest. The velocity of the air in the shaft, and hence its ventilating power, will depend, 1st, on the difference of temperature between the inner and outer air; 2d, on the length of the shaft; 3d, on the amount of friction in the shaft; and, 4th, on the freedom, or otherwise, with which the air to supply the shaft enters the room.

In giving these as the elements which alone govern the velocity, and consequently the quantity, of the air passing through such shafts, the commissioners have omitted the mention of another which has as much, if not more, influence over the result as any other, and that is the *shape of the shaft.*

It will be readily admitted that the current of air through a shaft whose upper, or discharging extremity, is contracted to a smaller area than its lower, or receiving extremity, must necessarily be more or less impeded from the double cause of increased friction of the air in the tube, and the *crowding* of it at the point of discharge. In a shaft of parallel sides, *i. e.*, of equal calibre through its whole length, there will be some friction, but no crowding at the point of exit, unless it should happen that by any means the air should become raised in temperature as it passes through, and by its consequent increased expansion it should press against the sides of the shaft. All of these obstructions, however, are entirely overcome, and the through passage of the air facilitated, by a slight gradual enlargement of the area of the shaft as it advances in length. By this gradual enlargement, the shaft obtains the shape of a trumpet, and the column of air

within it, if set in motion by any means, will find more and more room as it ascends, and it will consequently expand to fill the partial void, or at least will not infringe upon the wider sides of the tube, and thus avoid the impediment of friction, at the same time the partial vacuum invites a more rapid *inflow* below. The form here alluded to has been successfully adopted in factory chimneys, where a powerful draft is required; and has also been very successfully applied to ventilating purposes.

Care must be taken, however, not to increase the calibre of the shaft too rapidly, in other words to make the egress of air in too great disproportion to its ingress; otherwise, the action of the shaft will be counteracted by opposing currents at the outer end. The proportion of increase in size has been in practice, in those cases which have fallen under our observation, limited to one inch increased diameter of a circular shaft for every twelve inches in length. Within this limit the action is found to be greatly increased, while beyond it, counteracting currents seem to be produced in greater or less degree.

Although the application of this principle of the expanding tube appears to have been but recently applied to chimneys and ventilating shafts, it is nevertheless as old as the circulation of the blood. John Hunter took great pains to prove that the aorta had its diameter enlarged as it proceeded from the heart, and that the areas of the branches of an artery were greater than the diameter of the parent trunk. This principle in the flowing of liquids, whereby the friction of the fluids against the sides of the containing tubes is avoided, is just as applicable to currents of gaseous fluids, and, as we have several times seen demonstrated, is a highly valuable aid in ventilation of buildings. With the addition of the conical form to the ventilating shafts of the British barracks, the commissioners would doubtless have perfected their arrangements.

But, as correctly stated by the commissioners—

"A ventilating shaft and a chimney-flue are not of themselves sufficient to ventilate a room. If a room has two fire-places, they will draw against each other, and the fire-place with the strongest draught will supply itself by drawing the smoke down the other chimney, unless it can obtain an air-supply with a smaller expenditure of force. For a similar reason, if a closed barrack has no other means of ventilation than a foul air-shaft and a chimney flue, the fire-place will certainly supply itself by drawing air down the shaft, and troublesome down drafts will be produced. It is essential, therefore, to provide inlets for air to supply both the fire and the ventilating shaft."

It was determined, on this reasoning, to furnish each barrack room needing them, with "inlets for fresh air," and further, it was decided to place them close to the ceiling, to afford opportunity for the air to be disseminated as widely as possible over the room, before being drawn away by the fire, or the foul air shaft. In barrack rooms of ordinary size, two inlets were recommended on opposite sides of the room, a greater number for larger rooms. These inlets were made of iron or perforated air bricks; to prevent unpleasant draughts, a triangular wooden box covered the inside opening, which received the air at the cornice, and a perforated zinc plate which formed the upper side of the box, distributed the air in an upward direction, and as it struck the ceiling it was diffused over the room. Inlets near the floor were discarded, for the double reason that the soldiers would close them, and the current through them would not mingle freely with the air of the room, but pass more directly to the grate and be drawn up the chimney.

"*Ventilation of Stables under Barrack Rooms.*—In every cavalry barrack, having men's rooms over stables, we have endeavoured as far as possible to diminish the risk of effluvia passing into the men's rooms through the stable buildings, by carrying up four shafts one from each corner of the stable, to above the roof. These shafts have a total conjoint area of twelve square inches per horse. Their object is twofold: to improve the ventilation of the stable itself, and to prevent the accumulation of foul air at the ceiling of the stable. Where it has been necessary to carry these shafts through the men's rooms, they have been lined inside with soldered zinc, in order to obviate any risk of leakage within the room. We have found ventilation by *four* shafts, one carried up from each corner, with inlets for fresh air, similar to those for barrack rooms, but without the covers, by far the most satisfactory method for stables with rooms of any kind over them. For stables without rooms over them, a raised ridge forms the best outlet, with a row of perforated bricks under the eaves to act as inlets for fresh air."

Thus were the means for maintaining a pure atmosphere varied by the commissioners to suit the circumstances of each room, or building, according to its size, its position, its uses, &c. In some instances Arnott's silk-flap valve, in others Muir's or Mackinnell's double current ventilator, or perforated glass panes in the windows, or Sherringham's ventilator (an iron air brick, or box, inserted close to the ceiling, and affording a direct communication with the external air) was employed, and thus did they indefatigably regulate the atmospheric condition of every room of every kind in all the barracks and hospitals of the United Kingdom. The ventilation of gas burners also came within their observation, and was effected by a funnel over the jet, conducting the air from it to the chimney or a ventilating shaft.

In addition to the ventilation of these important institutions, every other matter connected with their sanitary condition came under the observation and correction of the commissioners, and the results of their labours is a monument to their fidelity and intelligence, an example to all the world.

Improvements in warming and lighting; in water supply; in drainage, latrines, and urinals (of which copious pictorial illustrations are given), in ash and manure pits; in ablution rooms and baths (Stirling Castle is the only barrack in which a *drinking fountain* in use was found in all Great Britain); in cook-houses and cooking apparatus; in wash-houses and drying closets—all were undertaken and accomplished in the most thorough manner possible.

The amount of labour performed by the commissioners may be inferred by the fact which we gather from the appendix to the report, that out of the 164 barracks inspected and "doctored" by them, there were only five in which the regulation number of inmates did not exceed the allowance of one man to each 600 cubic feet of air, the excess varying from 9 (the barracks of the Royal Engineers at Portsmouth) to 1364 (at Chatham). So also with regard to the 114 military hospitals examined; there were but 6 in which 1200 cubic feet of air were allowed to each bed, a great majority having less than 700, and a large number less than 500.

In the construction of hospitals, the great points to be secured are:—

1. Purity of external atmosphere.
2. Abundance of pure air and sunlight within the building.
3. Facility of administration and discipline.

Acting on these principles, the report proceeds with a thorough digest of the particulars to be observed in the selection of proper sites, with a notice of such external evils as should be avoided; the isolation of hospitals;

the test of healthiness of sites; the plan and construction of the buildings; the position of the beds; the size and number of windows; arrangement of wards and ward offices, and administrative offices; the number of sick under one roof, and all with reference to the three recognized varieties of hospitals, viz.:—

1. The Regimental Hospital, single or consolidated.
2. General hospitals.
3. Camp, or temporary hospitals.

Several plans for each of these varieties are given, to which no description unaccompanied with the engraved designs can do justice, or render comprehensible. As the latest, and doubtless the best authority on the various topics discussed, this volume is peculiarly valuable to us at the present time, and from personal observation of several of the general military hospitals erected since the commencement of the rebellion, we know its pages might have been consulted with great advantage to their plans of construction and arrangement, which, it is evident from their defects, has not been the case. In too many instances, the proposition laid down by the commissioners, as the great object sought in the construction of a hospital, to which everything else is only subsidiary, has been overlooked on this as well as on the other side of the Atlantic, viz.: *the recovery of the largest number of sick men in the shortest possible time.*

On the subject of the *ventilation of tents*, which the commissioners justly regard as one of the most important necessities of camp life, and the neglect of which is a prolific source of disease, they give some good advice, though we should have been glad to see a more elaborate discussion of that point. They are content with simply recommending "ventilating openings of sufficient size around the tent pole." In this connection we are pleased to be able to say that to our own country belongs the credit of being the first to use a *well ventilated tent*, and one that combines with this improvement another highly important one, viz.: arrangement by which the men are raised above the ground when asleep, thus avoiding the evils incident to contact with the cold wet soil. This is accomplished by an ingeniously devised system of *hammocks*, which are stretched in a very simple and secure manner on the wooden bars forming the frame-work of the tent, and which, when removed in the day time, leave a free space of the whole interior of the tent—a great advantage over all other forms of beds, which necessarily occupy the floor during the day as well as night. We regret that this tent has not been more generally introduced into the army. J. H. G.

ART. XVIII.—*The New Sydenham Society.* Vol. XI. *Selected Monographs:* CZERMAK *on the Practical Uses of the Laryngoscope;* DUSCH *on Thrombosis of the Cerebral Sinuses;* SCHROEDER VAN DER KOLK *on Atrophy of the Brain;* RADICKE *on the Application of Statistics to Medical Inquiries; and* ESMARCH *on the Uses of Cold in Surgical Practice.* London, 1861. 8vo. pp. 329.

CZERMAK'S brochure was originally published in the German language, at Leipzig, in 1860, under the title of *Der Kehlkopfspiegel und seine Ver-*

werthung für Physiologie und Medizin. In June of the same year, a French translation appeared in Paris from the pen of Dr. L. Mandl. Of this French edition, a literal English translation has been executed for the Sydenham Society by Dr. G. D. Gibb, with the sanction of the author, who has enlarged the work by the addition of an appendix on Rhinoscopy, together with some notes and sketches.

This monograph is the second edition, as the author calls it, of all the articles published by him in various medical journals in 1858 and 1859, in which he has made it his study to bring into scientific and practical use the manifold applications of the *principle* of Liston and Garcia's method of inspecting the larynx.

The Sydenham Society has acted very judiciously in giving to this essay an English dress, inasmuch as the persevering and well-directed investigations recorded therein have been especially useful in bringing about a recognition of laryngoscopy as a most valuable aid, on the one hand, to the physiologist in reference to the mechanism of phonation, and, on the other, to the practical physician in regard to the diagnosis and nature of various pathological conditions of the laryngeal apparatus. The passing hint embodied in a few lines of one of the paragraphs of Liston's *Practical Surgery*, and the more definite mechanical suggestions of Avery and Garcia, have been so brilliantly realized in the labours of Professor Czermak that his monograph upon the subject will always occupy an important place in the literature of this branch of medical research—a literature which we may say, *en passant*, has already been enriched during the last three years by contributions from Türck, Gerhardt, Battaille, Merkel, Sieveking, and other well-known observers.

A case of formation of a thrombus in the superior longitudinal sinus, which fell under the notice of Prof. Th. von Dusch, of the University of Heidelberg, led to the publication of the interesting paper on Thrombosis contained in the volume under notice.

The formation of thrombi in the venous system during life is a subject of much pathological interest. Although cases of this affection have been recognized in various writings since the days of Morgagni, the conditions under which they most frequently occur, and the effects of their formation, have not been clearly understood until quite recently. By Hunter, they were considered to be exudations upon the inner surface of inflamed veins. They were afterwards shown to be true coagula, and were supposed to be the result of phlebitis—a view to which Cruveilhier gave the sanction of his authority. The investigations of Virchow have shown, however, that phlebitis is seldom followed by coagulation of the blood in the inflamed veins, and that, on the contrary, in the large number of cases, the formation of coagula in the veins precedes the inflammation in them. Dr. Dusch has collected and critically analyzed quite a large number of cases of thrombi occurring in the cerebral sinuses from various causes. From his investigations, he draws the following conclusions:—

"*Thrombosis of the sinuses of the brain* is either *a prolongation from the neighbouring veins*, or it *originates primarily in the sinus.*

"A. *Thrombosis of the sinuses by prolongation* is the consequence—

"I. *Of processes of inflammation* tending to necrosis and sanies in the vascular precincts of the sinus.

"These consist chiefly in caries of the bones of the skull, caries of the petrous bone from internal otitis being most frequent.

"II. *Of injuries of the bones of the skull*, inasmuch as the hemorrhage from the diploë which follows them leads to coagulation (hemorrhagic thrombosis).

"III. *Of effusions of blood into the substance of the brain or its membranes*, from which the thrombus extends through the smaller veins into the sinuses (hemorrhagic thrombosis).

"This form of thrombosis is characterized by the situation of the thrombus in the sinus (generally azygous) nearest to the cause; by the more advanced softening of the thrombus; by changes in the walls of the sinus; by inflammation in the brain and its membranes; and by metastatic processes in other organs.

"B. *Thrombosis originating primarily in the sinus* is the consequence—

"I. *Of influences which retard the current of the blood.*

"In the generality of cases, several causes act simultaneously in this direction, partly of a general, partly of a local character.

"1. *General causes retarding the current of the blood are*—

"*a. Deficient energy of the heart's action.*

"α. *In advanced age* (*marasmus senilis*). Diminished elasticity of the coats of the arteries must here be taken into account as a favouring element.

"β. *In infancy* (*marasmus infantilis*).

"γ. *In consequence of precedent acute or chronic diseases.*

"*b. Diminution of the quantity of the blood.* Its effect in retarding the circulation manifests itself chiefly in the sinuses of the brain. (It is generally associated with the causes mentioned under α.)

"α. *Direct retardation from losses of blood.*

"β. *Indirect retardation from profuse secretions*, in which cases a certain allowance must be made for the inspissation of the blood (diarrhœa and cholera infantum, profuse suppuration).

"*c. Impediments to the expansion of the lungs, which prevent the right side of the heart from emptying itself properly.* These impediments exist partly in the lungs themselves (pneumonia, atelectasis, tuberculosis), partly in the pleura (pleuritic effusion), or result from deficient action of the respiratory muscles (in rickets, ascites, peritonitis). Alone they do not appear to produce a thrombosis in the sinuses, but they must be regarded as very powerful auxiliaries.

"The thrombosis which results from the causes mentioned under B, I, 1, acting for the most part in combination (thrombosis from marasmus), is characterized by the situation of the thrombus most frequently in one of the azygous sinuses (the superior longitudinal or straight sinus); by its firmness; by the non-existence of disease in the walls of the sinus; by consecutive hemorrhages in the brain and its membranes; and by the absence or very unfrequent occurrence of metastatic processes in other organs.

"2. *Local causes which retard the circulation in the sinuses are*—

"*a. Pressure upon the sinus* itself by tumours and enlarged Pacchionian glands.

"*b. Pressure upon the large veins of the neck* by tumours, in consequence of which coagulation occurs first in them, and, by extension of the thrombus, also in the sinuses.

"(This comes, properly speaking, under A.)

"*c. Intrusion of foreign bodies and tumours into the sinus*, which diminish its calibre; here contact of the blood with the foreign body must be taken into account as favouring coagulation.

"II. *Of diseases of the walls of the sinus*, from altered molecular attraction between the diseased walls and the blood, especially in inflammatory processes in the former (?)"

In 1844, the late Professor Schroeder Van der Kolk received from Amsterdam the body of an idiotic girl to be used at his anatomical lectures. He opened the skull with care, and found that the left half of the brain was softened, atrophied, and in a state of morbid degeneration. This pathological condition of the encephalon was accompanied with atrophy of the

right side of the body. As, in the few instances of this condition to be found in the works of modern writers, the examinations made have been too superficial, and the details of the differences between the healthy and morbidly affected parts have not been traced with sufficient accuracy, Prof. Van der Kolk was led to make a very thorough and accurate investigation of the evident influence of the cerebral lesion over the rest of the system.

By the philosophical anatomist, who studies structure always with reference to function, whether normal or perverted, this monograph will be read with deep interest. It is deserving of attentive perusal, not only because it contains the minute details of a very remarkable case of disease, but also because it is accompanied with copious, critical, and erudite references to the investigations of many anatomical, physiological, and pathological writers of eminence. To the zealous student, the value of such references is inestimable.

Four lithographic plates of the thickened skull and atrophied brain accompany this paper.

The next article is from the pen of Professor Radicke, of Bonn, and is entitled: "On the Importance and Value of Arithmetic Means; with especial reference to recent Physiological Researches on the Determination of the Influence of certain Agencies upon the Metamorphosis of Tissue; with rules for accurately estimating the same." This is an important contribution to the logic of medicine.

"At a time so prolific in research of all kinds as the present," writes Dr. Bond, the translator of this monograph, "and when the aid of numerical comparison is so frequently invoked, not only in the domain of physiology and therapeutics, but also in that of practical medicine, it is imperatively requisite that we should know exactly the nature and amount of the assistance which such an aid is capable of affording. If it were necessary to add to the illustrations which Professor Radicke has given in the first of his papers of important generalizations founded upon an utterly insufficient and often inaccurate basis, there would be little difficulty in finding them in the English medical literature of the last few years. The service, therefore, which Professor Radicke has done to the cause of science, in thus calling attention to a growing evil, as well as in pointing out its remedy, can hardly be over-estimated, and his able and exhaustive discussion of the subject will, it is to be hoped, do something, in his own words, 'to stem the stream of baseless and, to a great extent, erroneous doctrines by which medical science threatens to be overwhelmed.' Statistics are a most effective instrument of research when rightly used; but, like other edged tools, in unskilful hands they are as likely to do hurt as good."

Radicke's paper is followed by a short supplement, written by Prof. Carl Vierordt, of Tübingen; and this, again, by "A Reply to Prof. Radicke's paper," published by Dr. F. W. Beneke, of Marburg. The criticisms contained in this "Reply" are noticed by Radicke in another communication "On the Deduction of Physiological and Pharmaco-Dynamical Probabilities from co-ordinated Series of Observations."

In the last of these "selected monographs," Prof. Esmarch, of the University of Kiel, advocates most strongly the employment of cold in various surgical affections, and gives a detailed account of its beneficial effects in cases of compound fractures, gun-shot fracture of the tibia, fracture of the lower part of the humerus, traumatic inflammation of the knee-joint after a perforating wound of the joint, suppuration of the knee-joint, inflammation of the sacro-iliac synchondrosis, chronic purulent inflammation of the

knee-joint, inflammation of the cervical vertebræ, Pott's curvature formed by suppuration of the eighth and ninth dorsal vertebræ, chronic rheumatic inflammation of several dorsal and lumbar vertebræ, hot abscess over the scapula after contusion, inflammation of the bursa patellæ, contusion of the globe of the eye, destruction of the eye by small shot, &c.

In this communication, the reader will find many useful hints as to the best methods of applying cold, the extent to which it should be used, and the indications for its employment. J. A. M.

ART. XIX.—*Guy's Hospital Reports.* Edited by SAMUEL WILKS, M.D., and ALFRED POLAND. Third Series, Vol. VIII. London: John Churchill, 1862. 8vo. pp. 325.

THE present volume of this valuable publication contains twenty original communications, nine lithographic plates, and a number of wood-cuts. As has been for some time past our practice, we shall lay before our readers a full analysis of its contents:—

I. *On Disease of the Supra-Renal Capsules; or Morbus Addisonii.* By SAMUEL WILKS, M.D.

About five years since the attention of the profession was called by the publication of Dr. Addison's treatise on the constitutional and local effects of disease of the supra-renal capsules, to a peculiar affection having as its important features a disease of those organs, a discoloration of the skin, and a remarkable progressive feebleness of the patient without any apparent cause. The facts and arguments that have been observed and published since that time, in regard to the existence or non-existence of this affection, the most important of which have been given in the quarterly summaries of the improvements and discoveries in the medical sciences in this journal, have led most physicians to disbelieve the correctness of the views of Dr. Addison. It has unquestionably been shown that supra-renal disease has been found on *post-mortem* examinations where there was no discoloration of the skin, and also that pigmentary discoloration constantly occurs without any morbid affection of these organs. It is known, also, that in the lower animals, when the capsules have been extirpated without great injury to the solar plexus, the animal continues to live as before; and that in men disease of the capsules has been found accidentally, that is, when there was no suspicion of disease, no discoloration of the skin, or marked debility, during life.

In the present paper, Dr. Wilks, who has already shown himself to be a firm believer in the existence of the *morbus Addisonii*, purposes to strengthen the original facts contained in Dr. Addison's treatise, by fresh instances, and also to define more precisely the pathological characters of the disease. With this object he gives the details of twenty-five cases which occurred under his own observation, or in which he examined and preserved the specimens, and examines critically the connection existing between the pathological condition of the capsules, and the presence or absence of certain symptoms.

When he published his work, Dr. Addison believed that any disease that affected the integrity of the supra-renal capsules would be attended by the

remarkable phenomena which he described. This, from more extensive observation, Dr. Wilks is satisfied can no longer be maintained, and he attributes to this mistake, on the part of Dr. Addison, a great deal of the scepticism existing in the profession on the subject. According to him, there is only one disease of the capsules that accompanies these phenomena, and of this he gives the following description: First, the organ is somewhat enlarged, and changed into a material that is semi-translucent, of a gray colour, softish, homogeneous, and, when examined microscopically, is found to be without structure, or sometimes slightly fibrillated, or containing a few abortive nuclei or cells. Subsequently, this lardaceous kind of material, which resembles what is often seen in the early stages of scrofulous enlargement of the lymphatic glands, undergoes a decay or degeneration, and changes into an opaque, yellowish substance. At a still later period this may soften into a putty-like matter, or it may dry up, leaving the mineral part as a chalky deposit scattered through the organs. For the production of the changes thus detailed some years are necessary.

If it be admitted, for the moment, that the discoloration of the skin, upon which so much stress is laid in the morbus Addisonii, always accompanies this peculiar morbid condition of the capsules, it will be necessary to admit that the affection must have lasted already some considerable time, and that it occasionally in fact proves fatal before the discoloration is effected. The eighth case detailed by Dr. Wilks is one in point. We will give its main features as briefly as possible. Henry M. M—, æt. 38, had for twelve months been failing; his principal complaint being pains in the limbs and general debility. He died about two weeks after admission into Guy's Hospital, with symptoms of utter prostration. On examination of the body, the heart, stomach, liver, spleen, kidneys, and brain were found healthy. Scattered through the lungs was found a number of yellowish deposits, about the size of peas, hard, and somewhat translucent in appearance. The supra-renal capsules were entirely destroyed, and, when cut in two, they presented no appearance of structure. The adventitious material taking the place of their normal elements, was in some parts translucent, and in others, where it had undergone probably further changes, it resembled exactly the uniform yellow material which is so commonly seen in lymphatic glands, and called scrofulous. In this case, where, as will be noticed, the disease of the capsules was well marked, and where, moreover, the other organs of the body were healthy, with the exception of some deposits in the lungs, *no discoloration whatever was discovered in any part of the skin.* From such a case as this it must be decided either that the skin becomes discolored after this peculiar disease of the capsules has lasted for some time, or that this peculiar disease of the capsules is not always accompanied by a bronzed skin. We have not come to the same conclusion as Dr. Wilks in the matter, and very probably because our *wills* are not the same; for in such circumstances it is generally true that *voluntas pro ratione stet.* In the case just related, where the patient died with all the organs sufficiently healthy, except the supra-renal capsules, the demonstrator of morbid anatomy, the teacher of pathological anatomy, *will* attribute the fatal termination of the case, the result of extreme debility, to the organ found diseased. We saw many men die last summer, whose skins were as dark as the skin of a mulatto, with symptoms of extreme prostration, and after death not a single organ in the body was found diseased. With the exception of a greater quantity of pigment here and there, perhaps more often deposited in the supra-renal capsules than elsewhere, there was nothing abnormal to be found, as a

general rule, in the bodies of those who died of the so-called *Chickahominy fever*. This was so markedly the case, that Professor Leidy, who made the *post-mortem* examinations we refer to, has declared to us never to have seen so many perfectly healthy organs as in those bodies.

As regards the second great objection, that discoloration of the skin has existed without disease of the supra-renal capsules, this Dr. Wilks frankly admits, adding, however, that he believes cases of the kind to be remarkably few, and that it should be remembered that the pigmentation of the skin always occurs in the rete-mucosum, and *probably may arise from several causes*.

To answer the two remaining objections brought forward to show that the supra-renal capsules are not vital organs, namely, that they can be removed with impunity from the lower animals, and that they have been found diseased in the bodies of men who died from accident or acute disease, in apparent health, Dr. Wilks gives it as his opinion that these organs, when diseased, cause death by implicating the adjacent organic nerves. There is nothing, however, to support this opinion in the details of the *post-mortem* examinations attached to the cases recorded; in all of them whenever the condition of the semi-lunar ganglia is noticed, it is stated that they appeared healthy. We would particularly call attention to this fact, in the history of Case XII. where this report is made of these ganglia, and the patient had had discoloration of the skin for three years, and therefore, according to Dr. Wilks, complete disorganization of the supra-renal capsules for more than that period.

Though the study of this paper of Dr. Wilks must afford gratification and instruction, we doubt whether it will alter the views of any member of the profession who does not already believe in the existence of the morbus Addisonii.

II. *Case of Tumour at the Base of the Brain; with Ophthalmic and Post-mortem Examination of the Eyes.* By C. Bader.

This case is one where a man died with most decided symptoms of cerebral mischief, amongst which was impairment of sight, that was shown by the ophthalmoscope, before death, to be accompanied by an enlarged and tortuous state of the veins of both retinæ. Notwithstanding the very considerable venous congestion of the retina, both it and the optic nerve were apparently unchanged in structure, and, according to the ophthalmoscopic appearances, the amaurosis was to be attributed to something else than temporary paralysis from pressure within the eye. An undue accumulation of blood at the base of the brain, from some cause or other, was supposed to be the cause of this condition of things.

At the *post-mortem* examination, an oval tumour, of a fibrous nature, about the size of a small hen's egg, was found at the base of the brain on the inner and lower surface of the right lobe of the cerebellum. The pons varolii was much compressed, and likewise the upper part of the medulla oblongata.

The whole account of the ophthalmoscopic examination, with the reflections of Dr. Bader, are exceedingly interesting:—

"The media (the transparent parts in front of the retina) transparent; retina, choroid, and sclera normal, except the bloodvessels (veins) of the retina, which were numerous, gorged with blood, and tortuous (elongated). The optic nerve (at the choro-retinal aperture) of the left eye appeared almost as red as the adjoining choroid, especially its temporal portion (inverted image), thus appearing ill-defined, *i. e.*, the adjoining choroidal aperture not well marked off. There

was no change in the retinal arteries where they pass through the nerve; the veins were as numerous and gorged, &c., as in the retina.

"In the right eye a similar state of the veins existed in a still higher degree. The situation of the optic nerve (of the choro-retinal aperture) could only be recognized by the vessels of the retina converging towards and passing through it; the contours of the aperture were observed by the great vascularity of the nerve thus blending in colour with the choroid, and probably changing the reflection from the retina.

"A similar state of bloodvessels in the retina and optic nerve I have noticed—

"(1) In chronic forms of sub-retinal dropsy (these were excluded by the transparent state of the retina and the healthy appearance of the choroid).

"(2) In retinitis apoplectica (there were no apoplexies in this case, though they might have appeared finally if the impairment in the circulation had continued).

"The state was not due to any intra-ocular pressure (at the scleral or at the choro-retinal aperture), because the veins were equally (proportionately) enlarged in the optic nerve and in the retina, and there was no anæmia of the optic nerve. It might have been ascribed to structural changes of the nerve itself, but the latter, in those cases, is generally found pearly white or anæmic. The other cerebral symptoms, together with the enlarged, tortuous state of the veins of both the retinæ, made it probable that an undue accumulation of blood at the base of the brain was the cause of the state of the bloodvessels (veins) of the retina. The impairment of sight could not, according to the ophthalmoscopic appearances, be attributed to a temporary paralysis of the nerve from pressure, by the over-filled bloodvessels within the eye. It appears, from the healthy state of the retina and optic nerve (microscopically), that the changes at the base of the brain were the cause of blindness. Ophthalmoscopically, it was interesting to find the retina and optic nerve apparently unchanged in structure with such considerable venous congestion of the retina.

"The indistinctness of the optic nerve at the choro-retinal aperture I attribute to the change of refractions of the retina at this part. We may consider the congestion of the retina, the interior of the eye and its functions being otherwise normal, a valuable means of recognizing impairments of the circulation at the base of the brain. It would be interesting, in cases of brain disease, whether vision be impaired or not, to examine the retina for its vascularity, with a view of watching cerebral changes and establishing the value of this diagnostical aid."

After death, one of the eyes having been in a weak solution of chromic acid for a few days, was examined microscopically. The choroid and retina were healthy; the elements of the latter were well seen, and their relative position not in the slightest degree disturbed; there were no signs of pressure at the retinal aperture; the optic nerve appeared equally healthy; the connective tissue, the individual nerve-fibres, and the bundles of nerve-fibres, the piles of nuclei between the fibres, the relative position of these elements to the retina, &c., was undisturbed.

III. and IV. *Remarks on the Stereoscopic Theory of Vision, with Observations on the Experiments of Professor Wheatstone.* Section I. *The Stereoscope and Stereoscopic Results.* Section II. By JOSEPH TYRONE.

The experiments related in these papers are of great importance. If they are indeed as conclusive as they appear to us to be, we do not understand how it is possible to reconcile the results obtained with the stereoscopic theory of vision.

The following observations upon the stereoscopes in ordinary use, and the description of the one recommended will be found very interesting.

"Pictures, when seen in the stereoscope, are referred principally to the inner

tracts of the two retinæ, while in ordinary vision these tracts cannot act in concert, the impressions upon the inner side of the right eye, and upon the inner side of the left eye being distinct, and their images referred in opposite directions. It would be premature to conclude that this, of necessity, involves a fallacy; but it must, I think, be considered as a fact of some significance. Neither can the form of the stereoscopic lenses be disregarded. It is to be observed that these lenses are so constructed as to combine the properties of the convex lens with those of the prism, the result of this arrangement being, that the two pictures when viewed in the stereoscope, are displaced, that seen by the right eye a little to the left, and that seen by the left eye a little to the right. So far, therefore, as the superposition of the two stereoscopic pictures is assisted by this means, the result is optical, not ocular, and must be referred to the instrument, not to the eyes. These observations apply to the lenticular stereoscope of Sir David Brewster, which, admirable though it be for popular use, for scientific purposes is inferior to the original reflecting stereoscope of Mr. Wheatstone. Still I must confess that very early in these inquiries I became conscious of a necessity, for some method of investigation less artificial in character, and less restricted in its operations than any yet introduced. These advantages have been secured by means of an instrument I have constructed for the purpose, which since it is essential to some of the experiments hereafter to be introduced, and also affords increased facilities for similar observations, I will at once describe, under the name of the adjustive stereoscope. This instrument consists of a board, which forms the bottom, having sides and ends; in length it is 16 inches, in width 7 inches; the sides are 1 inch deep, and the ends 5 inches deep, the one to admit of space for the eye-holes, the other is fitted with grooves to receive the slides; the end for the eye-holes is fixed, that for the slides must allow of being moved backwards or forwards, for the regulation of distance. The distance between the centres of the eye-holes is 2½ inches; these openings, instead of containing lenses, are covered with two thin, brass plates, there being in each plate a small perforation like a pinhole; these two apertures must be brought exactly opposite the two pupils, and since the distance between the pupils varies in different individuals the eye-plates are made to slide in grooves, so that they can be readily adjusted to the eyes of different persons. The plates are on the outer side of the openings, that is, they are placed *before* the openings. (Plate.)

The eyes should be brought close to the apertures, and a thumb placed on either plate, when, by slight lateral motion, the apertures may be readily adjusted to the pupils, and they are so, when the right image is seen exclusively with the right eye alone, and the left image is seen exclusively with the left eye alone; these conditions being secured, if both eyes be opened, the images will be superposed. The inside of the instrument is to be painted black, and there are several points connected with its use which require particular attention, and on their due observance the integrity of its operations depends; first, and principally, upon the exact adjustment of the eye-plates, and second to this, but scarcely less, upon the arrangement of the light. I shall, therefore, add a few words upon these two points. The plates should be of thin brass, their dimensions three and a half inches by one and a half inch; it is essential that the apertures should be clear at their edges and free from shine or glitter, and the grooves in which they slide must be perfectly true, so that when the apertures are brought before the two pupils, they may appear as one opening. Care should be taken to secure a sufficient and equal light upon the objects, while the eyes are kept in shadow; under a lamp this may be easily managed, by having the side of the lamp next the observer covered, while the light falls upon the objects, and by daylight the same advantage can be secured by turning the back to the window, so that the eyes are in shadow while the objects are well illuminated."

This paper is abundantly illustrated with wood-cuts, some of them coloured, and a plate is attached representing an outline drawing of the adjustive stereoscope just described.

V. *Clinical Notes on some Cases of Disease of the Heart.* By S. O. HABERSHON, M. D.

This paper contains the detailed histories of eight cases of cardiac disease, with general remarks attached to each one. It is particularly worthy of attention on account of the judicious treatment recommended in chronic cardiac disease. By care as to diet and the state of the bowels, so as to avoid flatulence and hepatic congestion, by attention to the atmospheric condition so as to guard against recurrent attacks of bronchitis, and by regulating the muscular exercise of the patient, more can be done to retard the increase and the speedy termination of such disease than by any administration of medicines.

This paper is illustrated by a plate representing an aneurism of the aorta that opened into the pulmonary artery.

VI. *Notes of Several Cases in which Podophyllin was used as a Purgative.* By S. O. HABERSHON, M. D.

The cases here related are twelve in number, and of various diseases. In none of them is there anything remarkable in regard to the peculiar action of podophyllin; but we may notice a typographical error in the paper—the United States Dispensatory is referred to as the work of "Wood and *Barker*."

VII. *Two Cases of Extra-uterine Fœtation, treated by Abdominal Section.* By J. BRAXTON F. HICKS, M. D. F. R. S.

There are several points in connection with cases of extra-uterine pregnancy upon which the profession is still seeking information.

We know that the life of the child is not to be considered, for in every instance where an attempt has been made to extract the child while living, the mother has been destroyed. We know again, that when the operation is performed, the placenta should not be interfered with if at all adherent; but the propriety of performing an operation, and the most advantageous period for performing it are still in question.

There are so many cases on record where the fœtus has remained innocuous for an indefinite period, in some for more than fifty years, and the instances are so numerous where the fœtus has been got rid of by ulceration into the vagina, bladder, and intestines, as well as by abscess opening externally either at the umbilicus or some other part of the abdominal walls, that the surgeon must hesitate before he consents to perform an operation attended with so much danger as that of gastrotomy. As to the proper time of performing the operation, that must be decided mainly by the probabilities of adhesions having been formed between the cyst and the walls of the abdomen. In fact, we feel inclined to believe that the operation should never be undertaken until the surgeon, if not confident of the existence of such adhesions, has made an effort to establish them, as we have several times seen effected in cases of hydatid cysts of the liver, by the application of Vienna paste.[1]

In one of the two cases related by Dr. Hicks, as well as we can judge, for the last menstrual period is not stated, the full term had expired about eight months at the time of operation; in this case the cyst which communicated with the intestine was not adherent, and the patient died in twelve hours after the operation. In the second case, the full term had

[1] See Nelaton's Clinical Lectures on Surgery, Phila. 1855, page 531, &c.

expired about four years; the cyst, which communicated with the bladder, was completely adherent, and the patient recovered.

From the general remarks made by Dr. Hicks upon these cases, we think it well to make the following extract, though we prefer to the proceeding advocated by him, the plan we have referred to above:—

"It seems therefore, to me, that in all cases where there is no adhesion, or only a partial one, between the cyst and the parietes, it would be the safest, indeed imperative, to sew the free lips of the wound in the cyst to the corresponding side of the abdominal walls, before any attempt is made at the extraction of the fœtus. To prevent the escape of the fluid contents, during this performance, into the peritoneal cavity, will, of course, require care, but it might be accomplished by seizing the cyst with a vulcellum, while the opening into it is made quickly of the desired length. Then momentarily upon the formation of this, the finger of the operator upon one side, and of an assistant on the other, could enter the wound, and hold the edges in contact with those of the external opening. This point being secured, a sufficient number of sutures could then be made use of to secure perfect apposition throughout the length of the wound. Should air be in the cyst, as in these two cases, the above might be accomplished with much more ease. Care of course should be taken not to include any intestine or omentum. After the peritoneum is thus shut off, the fœtus should be extracted as carefully as possible, in whatever manner is easiest, according to its relation to the opening."

VIII. *Notes on Two Cases of Uterine Polypi.* By J. Braxton Hicks, M. D. F. R. S.

The first of the two cases related in this paper is chiefly interesting in a pathological point of view. A globular polypus, removed from the os uteri, was found, when microscopically examined, to contain, in a certain portion of its tissue, caudate cells, inclosing two or three nuclei, differing much in size. It was, therefore, according to Dr. Hicks, to be looked upon as bearing a close affinity to the more marked forms of malignant disease. At the expiration of eighteen months, the patient applied to Dr. Hicks again on account of a tumour, attached to the uterus, and extending nearly to the umbilicus. She soon afterwards died suddenly, from, as it afterwards appeared, fatty heart. On examining the growth, it was found to be much softer in the upper portion than in the lower, and to be formed there of large nucleated fibre-cells, together with cells similar to those described as occurring in the polypus first removed.

The second case is interesting chiefly in a practical point of view, as an instance of the ease and rapidity with wich the removal of an intra-uterine polypus may be effected by means of the annealed steel wire-rope ecraseur.

IX. *On Stricture, Retention of Urine, Stone in the Bladder, and other Diseases of the Urinary Organs.* By Thomas Bryant.

This is the fourth of the series of articles, being published by Mr. Bryant in the *Reports*, which are intended to illustrate, from cases that have occurred in Guy's Hospital, the surgery of the different regions of the body. In preceding articles, the surgery of the nervous, the respiratory, the circulatory, and the digestive organs have been freely illustrated from the very extensive clinical data there furnished.

The source from which the material for the present paper, on the surgery of the genito-urinary organs, is drawn, is thus tabulated:—

Simple organic stricture	336	9	345
" " with retention	106	3	109
" " with extravasation of urine	30	15	45
" " with urinary fistulæ	46	1	47
Traumatic stricture and its complications	34	1	35
Cases of "external division" and "perineal section"	36	7	43
Cases of puncture of bladder per rectum	20	3	23
Retention of urine	76	4	80
Ruptured urethra	19	—	19
Urethral calculus	12	2	14
Irritable bladder	134	2	136
Incontinence of urine	22	—	22
Hæmaturia	19	—	19
Inflammation of the prostate	6	—	6
Calculus vesicæ	112	22	134
Total	1008	69	1077

These cases, it may be interesting to know, were admitted into Guy's Hospital, from October 1st, 1853, to March 31st, 1861, or in a period of seven and a half years.

Spasmodic stricture is treated of by Mr. Bryant in the chapter on retention of urine, and he begins his paper by the consideration of organic or permanent stricture, under which head he includes both those strictures resulting from chronic inflammation in the urethra, styled simple organic stricture and those usually called traumatic, that is, following a partial or complete rupture of the canal from external or internal violence.

As respects the *locality* of simple organic stricture, he agrees entirely with the views of Mr. Thompson, with the results of whose investigations the readers of this journal are familiar.

In inquiring into the *causes* of stricture, out of the 646 cases, it is found that gonorrhœal inflammation had existed in 273 instances, or 42 per centum; and direct injury was the assigned cause in 43, or 6.6 per centum; leaving 330, or more than one-half, in which no definite cause could be discovered. Out of the 273 cases in which a gonorrhœa had previously existed, in 78, or 28 per centum, injections had been employed.

Of the 603 cases of simple organic stricture, 565 were treated by simple dilatation of the urethra, and 38 by some operation opening the urethra in the perineum. Of the 43 cases of traumatic stricture, 37 were treated by dilatation, and 6 by opening the urethra into the perineum. It is thus seen in that both simple and traumatic organic stricture, dilatation is the treatment most generally employed in Guy's Hospital, and that the knife is only resorted to in exceptional cases.

The internal division of the stricture receives but little support at Guy's Hospital. It was only performed in five of these cases, and in all of these the stricture existed either at, or within an inch of, the urethral orifice. The plan of treatment by means of caustics, has met with even less support than the one just mentioned.

"External division," the operation so much lauded by Professor Syme, was had recourse to in 7 cases of uncomplicated organic stricture, where dilatation failed from the too great irritability or too obstinate contractility of the stricture.

In those very rare cases where all local and constitutional treatment fails in affording relief, and the stricture is impermeable, Mr. Bryant believes

"perineal section" to be the best operation to resort to. For performing this difficult operation, the plan originally planned and executed by Mr. Cock is recommended. For its performance the following directions are given:—

"Having placed the patient in the position for lithotomy, pass the finger of the left hand into the rectum, and apply its point to the anterior margin of the prostate and membranous portion of the urethra—a part which it is not difficult to detect even in the most diseased urethras. A straight knife, with the edge turned upwards, should then be passed through the centre of the perineum, directly backwards to the apex of the urethral triangle or anterior margin of the prostate: this point being readily detected by the finger already resting in the rectum; an incision of the whole thickness of the parts should then be made upwards, the canal being freely opened and the stricture divided. By this means the urethra cannot fail to be freely opened, and it only requires care on the part of the surgeon to divide the whole stricture throughout its full extent. With a grooved probe the vesical orifice of the urethra may then be found, and a catheter, having been passed down the penis through the divided stricture, should then be introduced into the bladder, and left in."

Fifty-five of the cases of simple organic stricture, and three of those of traumatic stricture, were complicated with *extravasation of urine*. In such cases, giving rise to urinary abscess, many surgeons are satisfied with merely opening the abscess in the perineum, leaving the stricture to be subsequently treated by dilatation or by other means. The soundest and most correct practice, according to Mr. Bryant, is to divide the stricture, at the same time that the abscess is opened. In some severe cases of extravasation, where the urine is extensively infiltrated, he directs free incisions to be made into the infiltrated parts, and the "perineal section" to be performed without delay, in order to divide the stricture and to remove the obstruction to the flow of urine.

Sixty-five of the cases of simple organic stricture were complicated with urinary fistula. In forty-seven a cure was obtained by dilatation; in the remaining eighteen either the operation of perineal section or of external division was found necessary.

The treatment recommended by Mr. Bryant in cases where the stricture is traumatic is the same as that where it is organic. Of course the permanent effect of dilatation is not nearly so great; out of the forty-three cases tabulated, in six the operation of perineal section or of external division was absolutely required.

The following is the analysis of the cases of perineal section and external division:—

Cases of external division:—

Seven cases for irritable and contractile strictures; one of which died from renal disease and uræmic poisoning.

Five cases for stricture and extravasation; all recovered.

Four cases for stricture and perineal fistula; all did well.

Three cases of external division for traumatic stricture or its complications; all recovered.

Cases of perineal section:—

Five cases for stricture and extravasation; of which one died.

Fourteen cases for stricture and perineal fistula; two died.

Three cases for traumatic stricture and complications; two died.

Two cases for obstructed or impermeable urethra; one died.

The chapter on *retention of urine* contains some remarks upon retention as a result of elongated and adherent prepuce that will be novel to most

surgeons. Mr. Bryant says that he could quote cases in which an adherent prepuce had been the cause of retention and of incontinence of urine, and had produced every symptom of a vesical calculus, even hæmaturia. In his belief, in at least two-thirds of the cases of children suffering from urinary irritation, the sole cause is an adherent and elongated prepuce; and the only remedy is circumcision and the careful separation of the prepuce from the glans penis, with the removal of the confined secretion of Tyson's glands. Though inclined for many good reasons to favour, in every legitimate way, the practice of the excellent institution of circumcision, we cannot but believe the true cause in such cases to be rather a *narrow orifice* in the prepuce than the elongation and adhesion to the glans.

As a final conclusion to this chapter, Mr. Bryant declares "that in all cases of retention of urine from stricture, in which relief cannot be given by means of rational and not forcible catheterism, and in which the use of the warm bath and opium have fairly failed, the operation of puncturing the bladder through the rectum is to be performed." To the use of the warm bath and opium, that of chloroform and ether should be added; Mr. Bryant has evidently forgotten to mention them.

The *causes of death* in the thirty-six cases of stricture in which a fatal result took place, were as follows: In twenty-six a post-mortem examination was made, and in all diseased kidneys were discovered; not such disease as requires microscopical research for its detection, but positive destructive and suppurative disease of the organs; and of the remaining ten, two died with evident symptoms of uræmic poisoning, and in the other eight that most marked exhaustion which appears so characteristic of renal disease was present. The duration of the stricture has necessarily a serious influence in producing a fatal result; the longer the obstruction exists, the greater the probability, if not certainty, of the production of renal disease. In these thirty-six fatal cases the average duration of the stricture was seventeen years.

In the nineteen cases of *ruptured urethra*, in the majority of instances the injury was caused by some direct violence to the perineum, but in some the injury was produced by the passage of a cart-wheel across the pelvis. It is somewhat difficult to understand how such a result can be thus produced without a fracture of the pubic portion of the pelvis; but it is nevertheless true that such cases are occasionally met with. The practice recommended by Mr. Bryant is eminently judicious.

"If called, therefore, to a patient who has evidently been the subject of an injury to the urethra, suffering from simple retention, the first object of the surgeon should be to attempt to pass a catheter; if the urethra is not completely torn away, and there is not much blood locally effused, there will be a strong probability that he will succeed, and having done so, the instrument should be left and fastened in; a gum-elastic instrument, therefore, with a strong stilette, should be employed. If the attempt at catheterism, although having been fairly made, should fail, some other means must be employed, for it is clear that an outlet for the urine must be obtained, or otherwise extravasation, with its danger, will necessarily follow.

"An incision into the perineum with a grooved staff is unquestionably the soundest practice; by it the extravasated blood, and urine if it exists, finds a ready outlet, and the bladder when it contracts will find a vent for its contents, without the dangers occasioned by an extravasation of urine.

"If the orifice of the vesical end of the ruptured urethra can be found with a grooved probe, a catheter should be passed, the instrument having been first introduced through the penis, and subsequently guided upon the grooved probe into the bladder; if difficulty is experienced in finding the orifice, there need be

no alarm, as it is quite clear that the urine will readily find its way externally through the artificial wound; an early attempt to pass a catheter should, nevertheless, certainly be made, for it is most important that the continuity of the urethra should be restored as early as possible.

"When a catheter has been introduced, it must be left in; for it is equally important that the patency of the canal should be maintained during the whole period of its repair, and its subsequent contraction in a measure neutralized. The frequent passage of an instrument after the repair has taken place, is an important point to be observed; this practice being the best guarantee that a traumatic stricture will not be the result, and if it be, its risks will be materially lessened."

Of the fourteen cases of *impacted urethral calculus*, only three were in adults, and the remaining eleven were in children. In the adults the stone was immediately behind the glans penis, and was readily removed through the urethra. In only one case, in the children, had the stone passed as far as the penis; in all the others it had remained fixed in the perineum, and in five of the cases extravasation of urine had already occurred. The practical point for recollection is this: that in children extravasation of urine is almost certainly the result of an impacted calculus, and that an early perineal incision is the only sound treatment.

The chapters treating of *irritable and inflamed bladder* in children and in adults, *incontinence of urine*, *hæmaturia*, and *inflammation and abscess of the prostate*, contain valuable practical observations, but nothing calling here for special remark.

The last chapter in Mr. Bryant's interesting paper is on *stone in the bladder*. The whole number of cases recorded in the table is 134. Of these—

"In two cases the calculus was passed per urethra.

In seventeen cases lithotrity was performed, and one died.

In ninety-six cases lateral lithotomy was performed, fourteen proving fatal.

In two cases lithotomy was called for after lithotrity had failed, one case dying.

In five cases median lithotomy was executed, and in these cases death followed, the operation having been solely undertaken to afford relief.

In two cases median lithotomy was performed for prostatic calculi.

In one case the recto-vesical operation was successfully performed for a very large calculus.

In nine cases no operation was deemed justifiable, on account of the presence of some organic disease, three dying of renal disease while in the hospital."

The following are the conclusions drawn from these cases, concerning the treatment of stone in the bladder:—

"1. That in all cases of stone in the bladder, if the kidneys are sound, the operations of lithotomy or lithotrity are likely to prove successful.

"2. That if the kidneys are diseased, however skilfully may either operation be executed, a fatal result will probably ensue.

"3. That renal disease, if not capable of detection by the examination of the urine, can tolerably accurately be diagnosed by the history of the duration of the symptoms; the longer their existence the greater the probability of its presence, and *vice versâ*.

"4. That in children the operation of lithotomy is almost uniformly successful, about one case in twenty proving fatal, renal disease being very rare; and that it is to be preferred to the operation of lithotrity.

"5. That in adults free from organic disease, lithotrity is a most valuable operation, and is to be preferred to lithotomy, unless, from the size and nature of the calculus, or from any peculiarity in the patient, there are strong reasons for its rejection.

"6. That lithotomy in adults between puberty and forty years of age, is fatal

in one case out of seven; and after that age in one case out of one and three-quarters; renal disease being more frequent at these periods of life, and proving the general cause of death after the operation.

"7. That in patients probably and palpably the subjects of vesical, renal, or other organic disease, it is a question for future experience to decide which is the best operation to be performed for the relief of their suffering; that lithotomy recommends itself for our adoption as being the best measure for the relief of the patient in the majority of cases; although evidence apparently tends to show that, if the calculus be small, it may be successfully removed by means of the lithotrite.

"8. That there is an intermediate class of cases between the absolutely sound and the probably or positively diseased, in which no operation is really needed; including those in which there is evidence of organic disease, but in which the calculus causes little pain or constitutional disturbance; and in which, therefore, it is the soundest practice to apply our skill simply to give relief."

This paper of Mr. Bryant on the surgery of the genito-urinary system is drawn up with more care than the two preceding it in his series, but it nevertheless bears too many marks of want of time, or of carelessness. A whole chapter, the seventeenth, is not accounted for, and the grammar is not always correct. The very first sentence reads: "In previous pages, the surgery of the Nervous, Respiratory, Circulatory, and Digestive Systems *have* received our attention:" and we are directed on page 172 not to have recourse to a certain operation until "all other local and constitutional treatment *have been* tried and found to fail."

X. *Case of Progressive Atrophy of the Muscles of the Hands: Enlargement of the Ventricle of the Cord in the Cervical Region, with Atrophy of the Gray Matter:* (*Hydromyelus*). By WILLIAM GULL, M. D.

The interest of this case, pathologically, rests in the fact that, from the sudden death of the patient from typhus fever, an opportunity was afforded of discovering the "progressive muscular atrophy" to have had a central cause. There was chronic cervical *hydromyelus* comparable to a chronic *hydrocephalus*. The distension of the ventricle of the cord, by an accumulation of fluid, caused atrophy of the gray matter to such an extent, that in certain parts of the cervical region no other remains were found but the anterior cornua.

The history of the case must also suggest some doubts as to the truth of the present theories of the function of the gray matter of the cord. A very large part was here slowly removed without affecting sensation to any corresponding extent, and without disturbing the general functions of the cord, or the influence of the brain on the parts below.

This paper is illustrated by a wood cut and a lithographic plate.

XI. *A Case of Arrest of Development of the Humerus.* By JOHN BIRKETT.

In this case, the right humerus was only seven inches in length, while the left measured thirteen. The diameter of both bones, as well as could be determined by external examination, was the same. The movements of the shorter arm, and its muscular development, were as perfect as those of the other. About two inches below the acromion was a small cicatrix, where during infancy (the patient was then 25 years of age) an abscess had opened, and continued discharging for some time, without, however, at any time allowing any bony matter to escape.

This disease of childhood, situated at the junction of the epiphysis with the shaft, where, according to the experiments of Hales, Duhamel, Hunter,

and others, the shafts of the long bones increase in length by bony deposit at their ends, may be safely alleged as the cause of the deformity.

A lithographic plate is attached to this paper, exhibiting the arrest of development just described.

XII. *Case illustrating the Arrest of Development of the right Humerus, after an Injury received in Infancy.* By THOMAS BRYANT.

In this case the right humerus was five inches shorter than the left, while in other respects its development was quite natural. The patient, who was 30 years of age, had, when only a few months old, received an injury to the right shoulder from a fall; which injury was not followed by any suppuration, but by an arrest of the growth of the limb. This injury must have been sufficient to prevent the subsequent growth and development of the cartilaginous layer, placed between the shaft of the long bones and their epiphyses, from the growth and ossification of which the elongation of the long bones is effected.

The arrest of development in this case of Mr. Bryant is likewise exhibited in a lithographic plate.

XIII. *Description of a remarkable Enlargement of the Nerves.* By WALTER MOXON, M. D.

The nerves, in this case, were those of a subject already partially dissected when the peculiarity was remarked; the body of a female who died in the hospital of some chest affection. None but negative information could be obtained regarding the phenomena of her nervous system during life, which may be regretted, inasmuch as it is supposed, by some, that the amount of *will* the nerves can conduct varies with their magnitude. The nerves of this subject were uniformly increased in size throughout their entire extent, so as to be nearly three times larger than usual. The average diameter of the nerve-tubules was $\frac{1}{950}$th to $\frac{1}{850}$th inch, in place of $\frac{1}{2000}$th or $\frac{1}{1500}$th.

This remarkable enlargement of the nerves is illustrated by a plate containing five figures.

XIV. *Description of some new Wax-Models lately added to the Museum.* By THE CURATOR.

The models here described are those of a *disease of the skin produced by post-mortem examinations, or verruca necrogenica; arsenical eruption on the face; glanders; melanotic tumours of the leg;* and *pathological models of the heart, and of the other viscera in cardiac diseases.*

The disease of the skin of the hands, which is produced by the constant irritation from the acridity of the morbid fluids of the dead body, is one we have never met with or seen described before. A warty thickening of the epithelium is said to take place, in these persons, on the knuckles and the first joints of the fingers. This, in the course of time, becomes of a dark colour, and fissured, until a kind of ichthyotic condition is produced.

XV. *Some Points in the Toxicology of Copper.* By WILLIAM ODLING, M. B., F. R. S.

This paper contains much that is valuable to those who may be called upon to examine organic tissues for the presence of copper.

XVI. *On the Nomenclature of Organic Compounds.* By WILLIAM ODLING, M. B., F. R. S.

In this paper a new plan of nomenclature in organic chemistry is advo-

cated, on account of the striking inconveniences and incongruities of the one now in general use.

XVII. *Case of Deformity of the Mouth, after Sloughing of the Cheek from Fever; Operation and Recovery.* By THOMAS BRYANT.

For the comprehension of the deformity that existed in this case, the nature of the operations which were performed, and the very gratifying result that was obtained, it is necessary to consult the plates, three in number, by which the paper is illustrated. It is one of the most satisfactory cases of the kind to be met with on record.

XVIII. *Almond Food as a Substitute for Bread in Diabetes.* By F. W. PAVY, M. D.

In the treatment of diabetes, almost all physicians, whatever views they may hold respecting the pathology of the disease, agree in recommending abstinence from starchy and saccharine articles of food. An exclusive diet of animal food is, however, so fatiguing to the patient, that it is a matter of importance to discover a vegetable product, containing neither sugar nor starch, that may be used as a substitute for bread. In searching for such a substitute, medical men have confined themselves to separating the starch from the gluten and lignin of the seeds of the *cerealia*. Mr. Pavy has turned his attention to the seeds where, in place of starch, oil is found, and after passing in review many vegetable products, has fixed upon the sweet almond as the most promising. These, when thoroughly ground, he finds to be readily digested, and the oleaginous element is desirable as an article of consumption in diabetic patients, who are unable to use the other, the saccharine, form of the calorifacient element of food.

Three cases are reported, showing the effect of the almond food, conjoined with an animal diet, in diminishing the elimination of sugar.

XIX. *On the Water of Guy's Hospital Well.* By AUGUST DUPRE, PH. D., F. C. S.

This paper contains nothing of special interest to our readers.

XX. *Spontaneous Aneurism of the Brachial Artery cured by Compression.* By JOHN BIRKETT.

The patient, in this case, was a medical man, only 29 years of age, who could not remember to have ever received any blow, strain, or injury of any kind, on the arm. The compression was continued for more than four months.

W. F. A.

BIBLIOGRAPHICAL NOTICES.

ART. XX.—*Transactions of State Medical Societies:*—

1. *Medical Communications of the Massachusetts Medical Society, at its Annual Meeting*, held May, 1862. 8vo. pp. 216, second series, Vol. VI., Part II. Boston, 1862.
2. *Medical Communications with the Proceedings of the Seventh Annual Convention of the Connecticut Medical Society*, held at Bridgeport, May 28 and 29, 1862. New series, Vol. I., No. 3. New Haven, 1862.

THE initial paper in the present volume of communications made to the Massachusetts Medical Society—*on the topographical distribution and local origin of consumption in Massachusetts*—is from Dr. HENRY I. BOWDITCH, of Boston. It is, confessedly, one of a deeply interesting character, and well deserving of a careful examination by every member of the profession. The truth of the two propositions laid down by the author, so far as the facts collected and arranged by him in the paper before us go, would seem to be established as to Massachusetts and the New England States generally. Should they be found to hold good in respect also to the other habitable portions of the globe, the communication of Dr. Bowditch cannot but be viewed as one of the most important of the recent contributions to pathology.

The propositions discussed by Dr. Bowditch are as follows:—

"*First.* A residence on or near a damp soil, whether that dampness be inherent in the soil itself, or caused by percolation from adjacent ponds, rivers, meadows, marshes, or springy soils, is one of the primal causes of consumption."

"*Second.* Consumption can be checked in its career, and possibly, nay probably, prevented in some instances, by attention to this law."

The evident increase in the prevalence of consumption throughout the greater portion of the United States, and the almost invariable destruction of life by which it is attended, renders everything which relates to the causes by which it is produced of the highest importance, inasmuch as a knowledge of its primary causes constitutes the only sure basis upon which a rational and certain prophylaxis of the disease is to be founded.

The etiology of pulmonary phthisis has heretofore proved a stumbling block in the way of every pathologist who has undertaken the investigation of the disease. Much of this, it appears to us, has arisen, in part, from imperfect observation in respect to the circumstances under which the disease has been found to prevail, and to the greatest extent; in part, also, from not properly distinguishing between the tubercular dyscrasy, and the diseases which occur in those individuals in whom such dyscrasy is present; the causes to which the one or the other owes its origin, and the phenomena and results proper to them respectively.

By whatever causes engendered, it is very evident that tuberculosis is a vice of nutrition. Cells, it is true, are regularly formed from the blood, but of such a character as to unfit them from undergoing the metamorphosis required to assimilate them with the tissues, for the building up or renewal of which they were destined. They remain, therefore, in the tissues as albuminoid deposits. These accumulate, more or less slowly, interfering by their presence and bulk with the functions of the organ in which they are present, and, undergoing a slow process of softening, bring about, finally, its entire destruction.

The course of tuberculosis is materially modified, when, from any cause, inflammation is excited in the organs which are its seat. Thus, in cases of simple tuberculosis of the lungs, we have a form of consumption, insidious in its approach, and progressing slowly towards a fatal termination—a true *phthisis*

pulmonalis—a gradual wasting, a melting away, as it were, of the lungs and of the entire body; where death would seem to linger, as though loth to desert the emaciated frame. When, however, inflammation is set up in the tuberculized lung, we have then our more common form of consumption; which is often, apparently, sudden in its development, and always more or less rapid in its fatal course, sometimes so much so as to obtain for it the popular denomination of galloping consumption.

Extended series of statistics bearing upon the subject of the climatology of consumption, collected under circumstances well adapted to insure their entire accuracy, would appear to prove that the climate the least favourable to the production of tuberculosis, and especially of the lungs, is one that is dry, equable, and of a low rather than a high temperature.

We collected, some few years since, a very large number of statistics to illustrate the particular circumstances under which consumption was found most extensively to prevail, and the class of persons who constitute the majority of its victims. From a careful collation of these, we arrived at the conclusion that an indoor, sedentary, luxurious, and artificial life was the one by which most frequently consumption was engendered; while, on the other hand, an active life, spent chiefly in the open air, in healthy situations, followed by an adequate amount of sleep at night, in dry, clean, and well ventilated chambers, with a sufficient supply of appropriate nourishment and clothing, constituted the conditions which would most certainly guarantee against its occurrence.

The fact which has been lately established, that a very large number, if not the majority of the sailors belonging to the national marine of Great Britain, who die of disease, perish from tubercular consumption, would appear, at first sight, to invalidate the correctness of the above conclusion, but we believe it will be found to do so only in appearance when all the circumstances under which sailors, even those on board government vessels, are placed, are closely investigated. But, let this be as it may, it is unquestionably true—basing our conclusion upon the whole of the facts in our possession—that they who inhabit a dry, cool, equable climate, lead an active outdoor life, with sufficient intervals of rest, and are, at the same time, amply supplied with proper food and raiment, are those in whom consumption has been found to be, to say the least, a very rare disease.

In the communication which has suggested these remarks, Dr. Bowditch has adduced a chain of evidence which he believes will fully establish the fact that *soil moisture* constitutes one of the prime causes of consumption, at least in the New England States, and perhaps, also, in all other places where the disease prevails.

The axioms which Dr. B. lays down are these:—

"1st. Consumption is not, as some writers have contended, endemic equally in every part of New England; but there are some localities where it is very rife, and others where it is vastly less destructive than in the State at large.

"2d. There is a law, hitherto scarcely noticed, or but vaguely hinted at by one or two individual writers, but, as I believe, never proved until now, which is one of the main causes, if not the sole cause, of this unequal topographical distribution of consumption in New England.

"3d. This law is intimately connected with, and apparently dependent on, *the humidity of the soils*, on or near which stand the towns, villages, or even single houses, where consumption prevails."

The existence of this *law of soil moisture*, as one of the prime causes of consumption in New England, can be proved, Dr. B. thinks, by several lines of argument, resting on actual facts obtained either from public or private records, statistical data, or the opinions of physicians practising medicine in various parts of New England. These lines of proof, or of argument, are drawn from the following sources:—

I. Massachusetts State Registration Reports.

II. Returns made to Dr. B. as a committee of the State Society, in the form of written reports from resident physicians, of one hundred and eighty-three towns.

III. Actual statistics of deaths from consumption furnished by the same correspondents. Some of these statistics are but incidentally mentioned, while

others are from towns districted and carefully examined with reference to the relative prevalence of consumption in the different districts. In some of the most important of these, the examination was made, Dr. B. states, without his correspondent or himself being aware of the existence of any law such as that which he presents.

"IV. Peculiarities of certain towns, and of villages in the same townships, in some of which consumption is quite prevalent, and in others much less so; these differences being connected most closely with corresponding differences in the amount of moisture of the soil of said places.

"V. Certain well known houses, which, in various towns, are known by the inhabitants and physicians to have been long noted as the abode of consumption, and in some of which several families have been, during the past fifty years, cut off by the disease, without the least suspicion, on the part of the occupants, of the fatal position in which the houses were placed.

"VI. Confirmatory facts, statistics, and opinions, from Rhode Island, Maine, and New Hampshire.

"VII. The medical statistics given in the Report on the health of the United States Army, strongly supporting the idea of the existence of the same law, and the operation of it over the whole of the United States.

"VIII. Results of Dr. B.'s own practice since he first became convinced of the truth of the law—said results consisting of (*a*) statistics from his private medical records: (*b*) Results actually derived from his choice of localities for consumptive patients, based on a belief in the law."

So far as the evidence goes which is derived from these several sources, and very fully and fairly set out in the report before us, it would seem very certainly to establish the following general propositions, namely, that consumption is not equally distributed over New England; that its greater or less prevalence depends very much upon the characteristics of the soil, on or near which the patients affected with it have resided; and that moisture of the soil is the only known characteristic that, so far as our present investigations have gone, is connected with the consumption breeding districts.

Among the important practical questions and suggestions which naturally arise from the subject as presented by Dr. Bowditch, are the following, which we quote entire:—

"Are there any localities in New England, which, from these investigations, we should deem unfitted for the residence of consumptive patients?

"I believe," says Dr. B., "that all towns, parts of towns, houses even, that *rest on* damp, cold soils, are by that very fact peculiarly liable to the prevalence of consumption. I believe that similar locations *near* wet meadows, rivers, marshes, &c., though less subject to the law, are nevertheless, in a lesser degree, promoters of consumption in the families resident thereupon. Even hills with a clayey subsoil retaining moisture, though not absolutely evil, are less good than a perfectly dry, porous soil, removed from any moisture. I suspect, moreover, that we ought to inquire more particularly than we have heretofore done, as to the exact condition of the cellar of a residence, whether it be wet or dry, even when the surroundings of the residence may seem perfectly good. All these statements I make, not on theory alone, but from actual experience, I think, of their truth, as learned from my professional practice during the past four or five years. Again, on theoretical, but I believe just grounds, I have objected to allowing consumptive patients to reside in houses, *heavily and* closely shaded by trees and vines; because the rays of the sun being prevented from reaching such abodes, dampness and extra coolness are thereby promoted. * * * Following out this idea, I have, at times, thinned out trees around a residence where a family was growing up, and among which one member had already shown signs of tubercular disease."

The next question which suggests itself is: Are there not places a residence in which, according to the investigations before us, will tend to prevent phthisis, or, at least, in which consumption will prevail much less than elsewhere, or possibly not at all?

"I do not absolutely know," Dr. B. remarks, "a single spot in New England, where consumption can be said, by statistics, never to have occurred. In choos-

ing a site for a dwelling house, the great desideratum is to obtain, not a perfectly *arid* place, for no such spot could be inhabited by man, but it should be in a portion of the township which is neither so high as to be exposed to violent gusts of weather, nor so low that moisture will collect around it. Let it be on the side of a hill, or plain, open to the south, and, if possible, defended from the north and east, on a dry, porous soil, through which water freely percolates, and which, even after a rain, retains little moisture. Let the cellar be dry, in which no mould will collect. Such a situation, I believe, on theory (confirmed by my general experience), if it can be found in any town in New England, will be more favourable for the consumptive, and less likely to have consumption appear in it, than another spot, with a different exposure, and having a wet soil."

A third question presents itself: Which are the places which *experience* has shown to be the best for the residence of consumptives?

"There are two distinct classes of townships and localities," says Dr. B., "which I should place in this category. They are either inland towns or islands; eight or ten miles from the shore, and thereby being, in reality, under an oceanic climate. Doubtless, there are many more localities, besides those I shall name, scattered in almost all the inland portions of the New England States. These must be eventually discovered by the registration agents, or by the careful and conscientious investigations of resident physicians. I have had actual experience of the advantages of placing patients at Grantville, a district in the township of Needham; also, upon the drier portions of Sharon and of Canton, and at the Isles of Shoals. All these towns lie about ten or fifteen miles inland, while the islands are about the same distance from the coast. The former have the land; the other the oceanic climate influences. The townships are remarkable for the dryness of their soil, and are generally somewhat elevated. In every one of them, I have had patients improve greatly, and some, whom I believe would have died in low coast or wet inland spots, have recovered or speedily improved from serious symptoms. The patients have all described a decided and peculiar effect, as having been produced on their lungs by the atmosphere of these places, whereby they were enabled to breathe more easily.

"The Isles of Shoals are off Portsmouth, New Hampshire. From the reports of physicians I have little doubt that Nantucket, Martha's Vineyard, and possibly Block Island, lying south of Massachusetts and Rhode Island, must be likewise useful. I am also inclined to believe that Nahant and Winthrop, rocky promontories projecting from the coast, will prove favourable sites.

"It may be objected, that in suggesting an island, I virtually ignore all my previous statements, in regard to the influence of moisture, as a cause of consumption. I answer, 1st. That it is evident that a small island, with an oceanic climate, may, and probably would, produce very different effects on a patient from those caused by a place on low and damp land. Hence, the two places are evidently under wholly different influences. The two spots are not analogous. But 2d. In the places I have named, I, in reality, do not vary from the rule of dryness of the soil, for all of them are either mere rocks, rising out of the ocean, with no marshes near; or they are masses of sand, so to speak, and essentially dry of character. Hence, they do, in reality, fall within the rule—only they have the oceanic atmosphere instead of the land atmosphere, encircling and covering them.

"Whether this is really a correct explanation or not, I am certain that, in many cases of early phthisis, the tonic, clear, soft air of the Isles of Shoals, in summer, has been of immense service. Two patients spent the winter there. In one patient, a crackling throughout the whole of one breast disappeared, which I fear it would not have done had the patient remained in Boston. The winds were violent, but the temperature was less severe than in corresponding places on the shore. These winds will, however, always prevent many from residing at the shoals during the winter, unless, perchance, the inherent healthfulness of the situation, and the superb marine views, that one can enjoy there, should, in some future time, cause a Sanatarium to be erected, properly constructed, to obviate, at least in part, these difficulties."

The subject of Dr. Bowditch's communication is of too great importance, and drawn up with too much care, not to demand for it a careful and candid perusal

on the part of every medical man. If the profession generally were to turn their attention to an investigation of the influence of a dry or wet soil on the production or prevention of consumption, a mass of facts would be soon accumulated of incalculable value in directing to a rational treatment of the disease.

After a list of diseased members of the Society, and a series of obituary notices, follows a communication from Dr. A. Ruppaner, of Boston, on the subject of *hypodermic injections* in the treatment of neuralgic and other diseases of the nervous system.

Hypodermic injection, or the application of opiates to the immediate peripheral seat of the pain in cases of neuralgic suffering, has recently attracted considerable attention on the part of several of the British physicians, and of a few upon the continent of Europe. Of the effects of the treatment some of these gentlemen speak in the highest terms of commendation. Patients, they state, who had suffered for days and nights extreme agony from an attack of neuralgia, notwithstanding the use of large doses of morphia, have been known to sink into a state of calm repose within a few minutes after a resort to hypodermic injections. Besides the list of cases of neuralgia relieved by this plan of medication, the records of our profession present the history, also, of cases of paralysis, tetanus, delirium tremens, chorea, continued watchfulness, etc., which are reported as having been successfully treated by the hypodermic method.

In the communication of Dr. Ruppaner the following are the questions discussed: 1st. The requisites for obtaining satisfactory and safe results from the use of hypodermic medication. 2d. The advantages obtained by the treatment. 3d. Its disadvantages. These are followed by the history of 210 cases, treated by hypodermic injections, reported by eighteen physicians and surgeons.

As requisites for obtaining satisfactory and safe results, Dr. R. enumerates the following: *a.* That the case be a proper one. *b.* That a suitable instrument be employed. *c.* That a concentrated solution of the remedy injected be used. *d.* That the quantity of fluid injected be exactly determined and known. *e.* That a proper place be chosen for the injection; and that it be not repeated at short intervals at the same point.

As to the cases most proper for treatment, Dr. R. remarks:—

"As a general rule, it will be found that the curative effect of the operation is most manifest in uncomplicated cases of recent standing, and in those which are most benefited by morphia applied to the blistered surface. Hence, to test the value of the proposed method of relieving the pain, it is essential that the application *in neuralgia* be limited to purely neuralgic affections—where the pain is actually seated in the course of the nerve; and it must, moreover, be remembered, that agreeably to the laws by which nervous action is propagated, the irritation, that is, *the pain*, may be seated *directly on*, or reflected *indirectly on the nerve*, at any point between its extreme peripheral distribution and the point at which it joins the brain."

"If the patient be subject to rheumatism or gout, or infected with a syphilitic taint, or is suffering from gastric and intestinal irritation, or exhibit symptoms of disease of the brain, or if we suspect pressure upon the nerve itself, caused either by a tumour or by thickening of the bony canal through which a branch of a nerve passes, we cannot expect success from subcutaneous injections, except temporarily—unless we use, at the same time, constitutional remedies appropriate to the case. In so far as this can be done, subcutaneous injection, with judicious constitutional treatment, will seldom disappoint the practitioner."

The operation should not be performed when heart disease exists, nor where there is great debility, nor in the very aged.

In respect to the proper instrument to be employed, Dr. R. prefers a screw syringe, giving the exact number of minims used. To the body of the syringe hollow needles of various lengths are attached. The point of the needle is sharp, and perforated on one side by an oblique opening, through which the fluid to be injected is expelled. The finer the needle the better, as there will be then less loss of blood at the time, and less oozing afterwards.

Needles of tempered steel answer every purpose. In using the instrument, a fold of the skin is to be held with the left index-finger and thumb, so as to make the part beyond the fingers tense, through which the point of the needle, held

at a right angle with the part, is to be pressed, with a quick, steady movement, and then given such a direction as shall be esteemed best. The injection of the requisite amount of fluid having been effected, and the syringe withdrawn, the escape of the injection is to be prevented by pressure for a moment upon the puncture with the thumb. No adhesive plaster should be applied.

As it is important not to inject a large quantity of fluid lest undue disturbance of the cellular tissue be produced, a concentrated solution of the sedative should always be used for injecting. It is evident that the stronger is the solution we employ, the fewer number of drops is requisite to accomplish the desired result.

Our object being to procure a certain effect with as small quantity as possible of fluid, we should duly consider and accurately determine the dose of the article injected. There should always be an adequate effect produced, still there is danger in producing too great an impression. It is impossible to lay down any general rule as to the amount it is proper to inject. The history of each case must be our guide—age and sex, experience, and the results of tentative experiences being, also, taken into account. Dr. R. offers the following summary as deserving of attention:—

1–2. Chronic cases require a larger dose; while the dose for females ought to be smaller than that for males.

"3. First injections ought always to be smaller than subsequent ones, for the sake of safety. As a general rule, half the ordinary stomachic dose for males, and the third for females, ought to be used.

"4. If the injection has to be repeated, the quantity can easily be increased. In such cases, sufficient time must be allowed to elapse for the effect of the first injection to pass off before the second is given. In 174 cases, reported by 18 different physicians, where the exact quantity injected has been stated, the first injections for adult females vary from $\frac{1}{8}$ to $\frac{1}{2}$ of a grain of morphia dissolved in a few drops of water; for adult males, from $\frac{1}{4}$ to $\frac{1}{2}$ or $\frac{3}{4}$ of a grain of the same. My average minimum dose for females is $\frac{1}{6}$ of a grain, and $\frac{1}{4}$ of a grain for males.

"5. In delirium tremens, mania, tetanus, and paralysis, the quantity first injected may be more powerful than in cases of neuralgia. Large doses of narcotics may be injected with perfect safety in proper cases. Thus, in a case of traumatic tetanus, under the care of Dr. W. Read, of Boston, I injected two grains of acetate of morphia in four operations, one directly after the other, without any ill effects. Dr. Béhier, of France, reports having used 61½ minims of a solution of sulphate of strychnia, in several cases of paralysis, in one injection, and to have repeated the operation six times. In fact, we are hardly as yet aware to what extent this treatment may be carried; further experiments are required to lay down safe and reliable rules."

According to Dr. R., the injection in cases of neuralgia should always be made at the most painful part, which can be easily ascertained by pressure upon the nerve. By this procedure almost immediate relief will, in many cases, be obtained; otherwise, several minutes, often a much longer period, as well as a larger quantity of the narcotic is required to produce the desired effect.

In other cases than those of neuralgia, in which subcutaneous injections have been found beneficial, localization is not a necessary condition to the success of the operation. In reference to the wide applicability of this form of medication, Dr. R. remarks:—

"When all other measures have been tried and failed, as is but too often the case, to bring sleep to the restless patient, harassed by excruciating pain; when the delirious or the maniac actually defies all restraints put into service; when tetanic spasms exclude the possibility of introducing medicines into the stomach; when that member itself refuses any longer to perform its accustomed duties; when rheumatic pain constantly shifts from place to place; in surgical injuries; in puerperal peritonitis; in short, in all those affections where the nervous system at large is affected, where the pain is more or less general, the hypodermic injection of narcotics has been tried, and in all cases the effect was immediate, or nearly so, either quiet or sleep sooner or later supervening."

The advantages of this plan of medication, according to Dr. R. are, (*a.*) The painlessness of its application. (*b.*) The speedinesss of its action, compared with the action of remedies however otherwise administered. (*c.*) Its certainty of action when all other means have been exhausted or rendered useless. (*d.*) The accuracy with which the amount injected can be known, enabling us thus to obtain the whole effect of the known quantity introduced. (*e.*) The greater benefit exerted on the local affection, by bringing the medicinal agent in direct contact with the parts involved in the disease.

The disadvantages by which the treatment is sometimes attended, are thus summed up by Dr. R.: (*a.*) The power of the remedy, and consequently the danger of its being used indiscriminately. (*b.*) The possibility of local inflammation occurring in the part repeatedly punctured. (*c.*) The nausea and vomiting sometimes induced. (*d.*) The possibility of the escape of the injected fluid through the puncture made for its introduction. (*e.*) The pain occasioned by the introduction in some positions of the needle. All of these alleged disadvantages, Dr. R. insists, can be overcome by the proper, careful, and skilful management of the operation.

In proof of the value and general efficacy of hypodermic medication, Dr. R. has collected from the most reliable English, French, German, and American sources 210 cases, reported by eighteen observers, in which it was employed. Forty-eight of these cases were of those treated by himself.

Of these cases 129 were of *neuralgia*, and 81, including 21 of which the reports are deficient in some particulars, were of *general nervous disorders*. Of the neuralgic cases, 55 were sciatic, 37 facial, 14 intercostal, 6 hemicrania, 5 lumbo-abdominal, 4 cervico-brachial, 3 of upper extremities, 1 cervico-occipital.

Of the remaining (81) cases of general nervous disorders, 16 were of rheumatic muscular pains; 10 of delirium tremens; 9 of paralysis (viz., 5 paraplegia, 2 hemiplegia, 1 of lower extremity, 1 of deltoid); 4 of tetanus; 4 of pleurodynia; 3 of chest asthma; 2 of chorea; 2 of continued wakefulness; 1 of pains symptomatic of cancer uteri; 1 of mania; 1 of puerperal peritonitis; 1 of sprain; 1 of dysuria; 1 of wound of the eye; 3 of pains dependent on other affections; cases imperfect in particulars 21.

Of the 210 cases, 114 were cured, 68 relieved, 8 not relieved, and 20 were not heard from. Deduct these latter and we have 190 cases to be accounted for, which sum up as follows:—

"*Cured*, 114 cases, or *three-fifths* of all the cases reported.

"*Relieved*, 68 cases, or a fraction *over* one-third of the whole number of cases reported.

"*Not relieved*, 8 cases, or only *one unsuccessful* case in every 24.

"Or to recapitulate, we have the following result: *Three* out of every *five* patients were cured; that is to say, were free from pain and discharged well, at the time the case was reported. A fraction *less than one* in three patients was relieved from suffering for the time. *One* out of every 24 patients did not derive any benefit at all from the treatment."

As Dr. R. justly remarks, the foregoing result is strongly in favour of the operation. Even though we admit that many of the cases may have been carelessly reported, and were simply relieved instead of being cured, the evidence still preponderates in favour of the treatment.

2. The initial article in the volume of communications presented at the annual convention of the Connecticut Medical Society for 1862, is the address of the president, Dr. Josiah G. Beckwith. The subject discussed is "Medical Progress." The address is highly creditable to its author—whether it be considered in respect to the truthfulness and appropriateness of the sentiments it inculcates, as to the aptness, neatness, and beauty of the language in which these are embodied. The views it inculcates, are, it is true, by no means new. But, although they have been urged upon the notice of the profession and the public again and again, their actual importance, and proper improvement have, heretofore, been almost entirely overlooked and neglected by both.

This address is followed by an interesting series of short biographical sketches,

commemorative of some of the early physicians of Norwich, by Dr. A. Woodward, of Franklin.

To this succeeds an account of nine cases illustrative of the prompt and often permanent relief produced by the hypodermic application of narcotics and sedatives in various distressing cases of rheumatism, gastrodynia, neuralgia, obstinate vomiting towards the close of pregnancy, and spasms from a dose of strychnia taken into the stomach. Dr. B. H. Catlin, of West Meriden, by whom these cases are reported, states that, in all cases save one, the relief was prompt, decided, and permanent. In the exceptional case—that of a feeble, broken-down man, 65 years of age, labouring under organic disease of the heart of several years' standing—to control an obstinate vomiting and diarrhœa, less than half a grain of morphia was injected. The vomiting ceased, but the patient began to sink, and died about daylight next morning. Dr. C. ascribes the fatal event to the chronic maladies under which the patient had long laboured. Not half the dose of morphia employed by him in other cases with good effect was injected in this, while the little effect produced by the large and repeated doses of opium the patient had previously taken by the stomach showed that he was not particularly sensible to the impression of opiates.

The "Plastic Constituents of the Blood, their Physiological and Pathological Relations," is the title of the next communication. It is by Dr. L. J. Sandford, of New Haven. A general character of accuracy pervades the facts and doctrine set forth in the communication of Dr. S. It comprises but very few new expositions of the several points involved in the general subject discussed—little that calls for especial comment.

The same remarks hold true, likewise, in respect to the communication which follows the above, "On the Sympathetic Nerve," by Dr. N. G. Hall, of Vernon. Neither of these two papers—though both are sufficiently correct and interesting—is, in our estimation, of a character that should command for it a place in the printed transactions of a State Medical Society. Such transactions should be the medium through which are made known, for the enlargement of the general fund of professional knowledge, the personal observations of practitioners scattered over the face of the country, or facts of general application, drawn from the aggregation and collation of the observations recorded by others, calculated to elucidate the etiology, nature, progress, prevention, and treatment of the diseases most frequently encountered by our physicians. Of course, we should not object to communications giving the result of new investigations regarding the physiology of any part of the human organism, or of a new exposition of the received views relative to the laws of life.

A very good outline sketch of the symptomatology and general features of diphtheria, as it recently prevailed epidemically in different parts of Connecticut, is presented by Dr. G. R. Hawley, of Hartford. It presents no points calling for especial notice.

A report is furnished by Dr. D. Crary, of Hartford, of two anomalous cases of disease, the peculiar feature of which is their close resemblance to each other throughout; so much so that the narrative of one would be that very nearly of the other.

Both patients were males, of steady habits and uniformly good health; both were young and unmarried. Davis, who was driver of a meat cart, was of a sanguine temperament, and weighed 162 pounds. Kazar was of a bilious temperament; he weighed 125 pounds, and worked at Colt's pistol factory. Both boarded at the same house, but were not room-mates.

On Monday, Davis took breakfast and dinner as usual, and worked all day. At night he complained of headache and great chilliness. He took some (so-called) composition powder, and went to bed. Vomited during the night a considerable amount of what his landlady described as "yellow-looking matter" and of orange-peel, and had, also, a natural stool. In the morning, he looked purplish about the face, especially under the eyes; one of his legs presented the same discoloration. Red spots were observed about the face, neck, and breast. Dr. Jackson saw him between 8 and 9 o'clock A. M. He was then very restless, tossing from side to side, and exclaiming, "I'm dying! I'm dying! Can't you help me?" He at first seemed to recognize the doctor, but soon relapsed into

unconscious delirium. His tongue had the same appearance it assumes in the semi-comatose state of typhus; extremities cool, not cold; pulse at wrist imperceptible; eyes much injected and prominent; skin of face, thorax, arms, hands, legs, and feet was purple, more intense in some places than in others. Circular spots, from one to three lines in diameter, and somewhat like what is known as blood-blisters, appeared upon the face and neck. The tongue had a dark coating, and the lips and teeth were loaded with similar coloured sordes. Death took place at about 9 A. M. of the same day.

When he heard at noon that Davis was dead, Kazar went into the room where the corpse lay. On his return he seemed much frightened, was pale, and scarce able to stand. At table he ate very little. At 3 o'clock he returned from his work, complaining of cold. During the afternoon he had frequent chills. On going to bed in the evening he took some "composition powder." During the night he vomited great quantities of very dark bilious-looking matter, and had also a natural passage from the bowels. In the morning Dr. Gary found him pulseless, with nearly cold feet and hands, and a furred blanched tongue, similar to what is met with in the last stages of cholera. Petechiæ were scattered over almost the entire surface. His face, hands, and feet, his arms to the elbows, and his legs to the knees, were covered with petechial spots of all sizes from that of a half dime to that of a dollar or over. The face presented a commingling of black and blue welts one or two inches long, as though caused by the blow of a whip. His mind was perfectly clear and calm. He complained of pain of the head over the eyes, with coldness of hands and feet. He stated that on his way home the preceding afternoon he had taken a glass of cider brandy, after which, for a short time, he felt better.

A consultation was had with Drs. Hastings and Jackson, and the patient put on the use of quinine, brandy, and pepper, with hot applications to the extremities. No reaction took place, and the patient died at about 11 o'clock A. M.

The small spots scattered irregularly over Davis's face and neck, of the size each of a No. B shot, appeared after death of a bright scarlet colour; the small spots on Kazar were smaller, not so bright, but more like the petechiæ of typhus fever. Davis, but not Kazar, up to the period of his death, had extreme thirst. Davis lived from the beginning of the attack about fifteen hours, Kazar twenty-one hours.

The history of a case of cerebro-spinal disease is reported by Dr. R. Deming, of Sharon. So far as the facts connected with this case are furnished in the history before us, they are both curious and interesting—it might have been rendered instructive also, had an examination of the patient's body been made after death. As it is, the case furnishes no light to lead us to definite judgment as to the true pathology of any attack, marked by similar phenomena, we might happen to meet with.

The notes of a case of ligation of the external iliac artery are given by Dr. J. W. Lawton, of Naugatuck. The patient received a stab one evening from a long penknife blade in the right thigh, three or four inches below Poupart's ligament, the wound being in a direction upwards and outwards in the line of the adductor longus muscle. From twenty to thirty ounces of blood were lost. A temporary dressing was applied, until the patient was removed to his home; when, as the hemorrhage was nearly arrested, no examination of the wound was made, but merely a compress and bandage were applied. Reaction was established, and the next day the patient, though weak, was otherwise comfortable. The symptoms proceeded favourably for a week. On the eleventh day the patient became restless and uneasy, and a strong arterial impulse was noticed. As Dr. L. bent down to examine the wound, blood gushed from it, in a full stream, to the amount of twenty ounces. By the application of a compress, and a silk handkerchief as a tourniquet, the hemorrhage was completely controlled. Drs. Platt and Hooker were called in consultation. The wound was now thoroughly examined, the clots broken up, and warm water injected, without any return of hemorrhage. The finger passed into the wound detected the pulsation of the femoral artery. Any operation was deemed inexpedient, from the danger attending it—the risk of secondary hemorrhage, and the uncertainty as to what artery was wounded. Pressure alone, by means of a tourniquet and compress,

was relied upon. This was watched by faithful assistants, with instructions to increase instantly the pressure should bleeding occur. On the second night subsequently ten ounces of blood were lost.

October 4th, eighteen days after the accident, bleeding occurred at intervals during the day. At 4 P. M., notwithstanding constant pressure was made over the groin, blood would jet out at times, in fine streams, to the height of several inches. The parts had become tender and intolerant of pressure. Ligation of the external iliac was now performed by Dr. Hooker. The wound was dressed with silver wire sutures, adhesive straps, and compresses. Three hours after the operation the patient complained of some pain, and vomited constantly from the effects of ether. A sixth of a grain of morphia directed to be given occasionally. Two days subsequently vomiting unchecked, limb warmer than natural, and so continued for weeks; it was quite tender, patient very restless. Bismuth and calomel ordered. At night pain increased, knee swollen. The patient became more stupid, restless; suffered severe pain; tongue brown, dry, and coated. Morphia discontinued, while milk punch and generous diet were ordered.

Oct. 8th. Patient comatose; knee exquisitely tender, with indistinct fluctuation; pulse 110 to 115. In addition, ten grains quinia per day were ordered, with fomentations to knee. The next day the patient was apparently moribund. The day after, the patient was found to be rational, his limbs cool, pulse 80 and weak. Same treatment continued. By night the pulse was stronger, and all the other symptoms more favourable. From this time the patient gradually improved. The ligatures all came away except one, which remained in nearly four weeks.

During the period of convalescence a swelling occurred at the angle of the lower jaw, on the right side, which increased rapidly, involving the side of the face and neck, extending down upon the chest. It terminated in a large abscess, an incision into which gave discharge to nearly half a pint of pus with sloughs of parotid gland. The discharge continued for several weeks, and the incision healed. The knee now grew worse, inflamed and painful, with an indistinct feeling of fluctuation.

Dec. 10th. The patient was removed to the hospital at New Haven, under the care of Dr. Charles Hooker. From this time his general condition constantly improved; the knee, however, remained flexed and anchylosed.

D. F. C.

ART. XXI.—*Reports of American Institutions for the Insane.*

1. *Of the Pennsylvania Hospital for the Insane, for the year* 1861.
2. *Of the Friends' Asylum, for the fiscal year* 1861–62.
3. *Of the Western Pennsylvania Hospital, for the year* 1861.
4. *Of the Bloomingdale Asylum, for the year* 1861.
5. *Of the McLean Asylum, for the year,* 1861.
6. *Of the Massachusetts State Hospital, at Northampton, for the fiscal year* 1860–61.
7. *Of the Longview Asylum, for the year* 1861.
8. *Of the New Hampshire Asylum, for the fiscal year* 1861–62.

1. SHOULD the progress of the next century, in the province of psychiatry, be equal to that of the century at the termination of which we write, the problem of The Perfect Hospital for the Insane can hardly fail of being solved. In this remark we allude not alone to the minor details of organization, classification, discipline, and the diversified means for the administration of a perfect moral treatment, but to the great primary question of the character of the hospital as it regards the sexes, and the duration of the disease of its patients. The Germans have tried almost every form of hospital in these respects, without, hitherto, arriving at unanimity of opinion upon the subject; but, so far as our knowledge extends, they have *not* tried that which has recently been adopted at the *Pennsylvania Hospital for the Insane*—the intermingling of both recent

and chronic cases, but the separation of the sexes by buildings somewhat remote each from the other, yet both under the same general administration and the same physician in chief. It is an experiment challenging the attention and the interest not only of American but also of European colonists. The testimony borne by Dr. Kirkbride in relation to the subject, after his second year of trial, is as follows:—

"Another year's experience has confirmed our previous impressions of the great value of the new arrangements, and has demonstrated more fully, if additional proof were still wanting, that the treatment of the two sexes in different buildings, as here conducted, without having, as far as we can discover, a single objection, has unquestionably many and important advantages."

This certainly looks encouraging; but it is no more so than we expected after having visited the Institution, examined both departments with all their admirable arrangements and appliances, and duly considered the whole establishment in its relation and adaptation to the wants of the insane.

	Men.	Women.	Total.
Patients in hospital Jan'y 1st, 1861 . . .	151	123	274
Admitted in course of the year	96	86	182
Whole number	247	209	456
Discharged, including deaths	119	82	201
Remaining, Dec. 31, 1861	128	127	255
Of the discharged, there were cured . . .	46	46	92
Died	21	8	29

Causes of death.—"Acute maniacal disease," 10; chronic softening of the brain, 5; pulmonary consumption, 4; exhaustion of chronic mania, 3; apoplexy, 3; suicide, 1; disease of heart, 1; dropsy, 1; "effects of a long journey," 1.

"The sixteenth annual course of lectures and evening entertainments which terminated at the usual period of the last summer, was, as those heretofore given, of nine months' duration—three times a week at least, at each department—and occupying about two hundred and fifty evenings. These entertainments being on alternate evenings at the two buildings, anything of special interest occurring at one, can be enjoyed by patients from the other; and this has been frequently done. A company of forty ladies has on several occasions gone to the new building during the past year."

"Every year adds to the conviction of the great importance of these entertainments in the management of a hospital for the insane. It is quite possible, with proper zeal and determination, to make the evening hours in such institutions the most pleasant in the whole day. Without some decided effort, however, this period is apt to become specially tiresome, and the wards, then, to present their most listless and discouraging appearance. From sunset to bedtime there should be a persistent effort on the part of all, to have something on hand that will, at least to some extent, excite the interest and attract the attention of even those of least mental activity. The first step is to have the corridors and parlours cheerfully lighted and comfortably furnished, to have in progress agreeable work, pleasing games, interesting to lookers on as well as players, pictures of various kinds, pleasant reading or music, and varying novelties that those best qualified for positions here will be constantly suggesting. In this work the officers of course must take the lead. There must be nothing likely to benefit the patients ever so little, too small or too low for their attention and interest. In this connection the services of the supervisors and of those employed specially as companions to the patients, on account of the greater amount of time they may devote to it, become particularly valuable. No less important is the interest of the attendants in their various wards, nor the assistance of convalescent patients, who often confer great benefits on those around them.

"As a general rule, the evenings devoted to lectures are pretty well occupied in preparing for them, by the hour in the room, and a pleasant talk on what has been seen or heard, afterwards. The other evenings of the week should never be neglected, as there is always some danger of their being.

"In nearly all cases, life, to be really happy, must be one of action. Especially

is it so in a hospital like this. From the hour of rising in the morning till that of retiring at night, except in cases of ordinary illness or high excitement, almost constant movement, change of occupation, variety of scene and surroundings, cheerful physical exercise and prudent mental employment are needed for every day, to develop the most successful results and aid in promoting cheerfulness and tranquillity in the wards. In carrying out all these objects, it must not be forgotten that they lose half their value if done simply as a required duty, without that personal interest and hearty good-will which rarely fails to convince patients, that what is urged upon them, is really intended to promote their comfort and restoration."

In all our reading of the reports of hospitals for the insane, we have met nothing more gratifying, nothing more truly indicative of a consciousness of one of the greatest stumbling-blocks of the hospital as it was, or of the necessity and the true method of removing that stumbling-block before we can obtain the hospital that is to be, than the foregoing extract. Dr. Kirkbride's words "specially tiresome," entirely fail adequately to express the character of the evenings in the hospitals of the olden time. The corridors in darkness, or each lighted by one miniature flame which only served to throw a sepulchral gloom along its wearisome length; the silence, unbroken but by the occasional raving of a maniac, or the gibberish of an imbecile; the stealthy, solemn, and solitary pacing to and fro, in the gloomiest portion of the hall, of some patient absorbed in the contemplation of his delusions; the lounging in chairs, the squatting in corners and along the side-walls, and the lying at full length, on back or on belly, upon the floor—these presented a picture—alas! *not* a picture, but a sad reality, a concrete embodiment of monotonous sluggishness, of ineffable stupidity, of a mental and physical apathy injurious to the participator, and depressing and discouraging to the beholder. As the frog, in the mathematical proposition, lost at night two of the three feet which, in his worthy endeavours to escape from the well, he had gained in the course of the preceding twelve hours, so, we have often thought, the patients subjected to, or permitted in, this course of melancholy listlessness, "fell back" in the evening through at least two-thirds of the distance toward health achieved during the day.

It needs no spirit of prophecy other than that derived from a mediocre knowledge of human nature to foretell the effects, or at least, the *tendency* of our national difficulties upon our hospitals for the insane. Those effects should, if possible, be prevented, that tendency opposed. Hence, we reproduce the following remarks, believing that they will be indorsed by every physician of long experience in the management of one of those hospitals:—

"No matter whether an institution is specially for the affluent, for the reception of all classes, or the humblest pauper hospital in the land, true economy consists in an avoidance of all waste, in having nothing done that is not useful in some way, in keeping everything in the highest state of efficiency, and doing all that is likely to restore to society its afflicted citizens in the shortest possible time. The best arrangements will always be found cheapest in the end, and the highest class of qualifications in every department, with liberal compensation, will prove more economical than inefficiency at the lowest grade of remuneration.

"In periods of unusual financial depression, when nearly every one is apt to feel the necessity for a reduction of personal expenses, there is always danger of the management of these institutions for the *cure* as well as the care of the insane, making the grave mistake of doing something as a means of lessening their expenses, that must unavoidably lower their character and impair their usefulness. Retrenchments may thus be carried to that point that they become absolute extravagance. This is clearly so if they diminish the usefulness of an institution, lessen the confidence of the public in its efficiency, and thus reduce its income to a far greater extent than they lower its expenditures. It can never be economy to neglect any available means of restoring the sick, of improving the condition of all the patients, and doing thoroughly what an institution has been specially established for. One establishment may expend scarcely more than half what another does, and yet if these expenditures are injudicious, it may be both wasteful and extravagant, while the other is truly economical."

2. Of the comparatively small, but the truly comfortable and domestic, or home-like Friends' Asylum, Dr. Worthington says:—

"Originating at a time when no institution existed in this country, that could serve as a model for its plan of construction, the founders of the asylum showed, by the quantity of land purchased, and by the amount of space allotted to each patient, in the construction and general plan of the building, a degree of liberality which has probably not since been surpassed. How far the asylum may have been successful in other respects in keeping pace with the progress of improvement, or how far the means employed in it, as compared with other institutions, may have contributed to the relief and restoration of the insane, is not for us to judge. It will be sufficient to say that during the past, as in previous years, we have felt the responsibility resting on us of diligently employing, for the benefit of our patients, every means within our reach, which the general experience has proved to be of real utility.

"The objects of its founders, besides furnishing medical aid, and suitable moral and religious restraint, mingled with judicious kindness and sympathy, for the restoration of the insane to the inestimable gift of reason, were also to provide an asylum for the relief of those whose disease was such as to leave no hope of recovery; where they might enjoy the comforts of home so far as they were capable of appreciating them, accompanied with every liberty consistent with their welfare and safety. These objects, it is believed, have been kept steadily in view, and it has been found, by constantly increasing experience, that the amount of personal restraint on the movements of the insane, deemed necessary for their own, and the safety of others, has regularly diminished down to the present time. *We have not in any case, for several years past, considered it needful to apply mechanical restraint for the prevention of acts of violence and destruction, and we have only resorted to it in any form in cases where severe bodily disease or debility has rendered a recumbent position indispensable to the safety of the patient's life.*"

The Italics are by the reviewer, and *not* by the author.

	Men.	Women.	Total.
Patients on the 1st of March, 1861			61
Admitted in the course of the year			15
Whole number	32	44	76
Discharged, including deaths	6	8	14
Remaining, March 1st, 1862	26	36	62
Of those discharged, there were cured	3	3	6
Died	1	3	4

Causes of death.—Cerebral congestion, 1; pneumonia, 1; general paralysis, 1; chronic bronchitis, 1.

The lectures and other evening entertainments were resumed and continued through the winter. The lectures were "listened to, and the experiments witnessed with much interest, by a large proportion of the patients." From the further exposition of the plan of moral treatment we make a few extracts.

"The value of out-door occupation consists as much in the change and variety it gives from the monotony of in-door asylum life, and the mental recreation thus afforded, as in the mere physical effects of muscular exercise. Without regard to the interest that may be excited in the mind of the patient by the work he performs, there is danger that the latter, by becoming toilsome, may even prove injurious. Care is taken to avoid such a consequence by endeavouring to interest the patient in his employment, and by limiting the time spent in labour to two or three hours in the early part of each day. * * * * For those who have been unaccustomed to agricultural labour, other means of furnishing physical exercise, combined with healthy mental excitement, are resorted to. Such patients spend a portion of each day in the open air, either in walking on the premises or in the vicinity of the asylum, or are engaged in the games of quoits, cricket, or foot-ball. The latter have only been in use during the last two years, and have proved a highly valuable addition to the means formerly employed for affording exercise to this class of our patients."

"The patients are encouraged to follow their own taste and inclinations in their in-door employments. Some of them became quite expert at a particular game, such as chess or backgammon; one patient draws and paints, and has produced a number of pictures, both in oil and water colours, which have been framed and hung on the walls. Another employed himself very successfully during the portion of the summer, in preparing the skeletons of leaves and other portions of plants; and another, who is so demented as to be almost incapable of any other employment, has become very proficient in the game of battledoor."

3. Our readers have already been informed of the efforts made by the managers of the Western Pennsylvania Hospital to erect, for their insane patients, a new building which should rank among the best institutions of its kind, as well as of the progress which, from year to year, they have made in their enterprise. The report now before us is embellished with a beautiful perspective view of the building as it is intended to be when complete. It is called "The Dixmont Hospital." Of its condition at the date of this report, as well as for its general plan, we quote the language of its architect, whose report is a model of compactness and perspicuity which might well be studied by scientific and literary men.

"The work on the new buildings of the Hospital for the Insane at Dixmont, is now nearly completed, the plastering being finished, and the carpenters being now engaged in putting up the finishing of the wood work inside of the building. Excepting the fixtures for heating, ventilation and water supply, which are all yet to be provided for, the buildings will be completed and ready for occupancy by the 1st of May next.

"The hospital proper consists of a central building, sixty-one feet front by one hundred and thirty deep, and four stories in height, arranged for the use of the officers, and to form store rooms and chapel. On each side of this central building extends a wing building, one hundred and four feet front by thirty-eight feet deep, and three stories in height, arranged with dormitories for use of the patients; each wing finishing with a building at the end of it, forty-five feet front by fifty-five feet deep, and four stories in height, arranged for day rooms of the patients. These buildings are erected with walls of brick, covered with roofs of iron, and have stone stairways, the whole being substantially constructed and finished in a neat, plain manner, the plan being arranged in reference to future extension by addition of other wings, to accommodate more patients.

"Detached from the hospital is, first, a building for the laundry, bakery and boiler room, forty-five feet by fifty-five, and two stories high, built of stone and covered with iron. Next, a building at the river for a pump house, twenty-six feet square and one story high, built of stone and covered with iron roofing. Lastly, a building for station house at the railroad, seventeen feet by thirty-two, built of brick and roofed with iron."

It is proper to state that the plan of the hospital embraces two additional wings, very similar to those already erected and to be appended to their extremities.

	Men.	Women.	Total.
Patients in the Western Pa. Hosp., Jan. 1st, 1861	59	52	111
Admitted in the course of the year	63	32	95
Whole number	122	84	206
Discharged, including deaths	55	41	96
Remaining, Dec. 31st, 1861	67	43	110
Of the discharged, there were cured . . .	31	19	50
Died	6	4	10

Died of consumption, 2; exhaustion of acute mania, 2; enteritis, 2; chronic dysentery, 1; congestion of the brain, 1; typhoid fever, 1; old age, 1.

In pleading for additional facilities for moral treatment, Dr. Reed says:—

"As a relief from trouble and anxiety of mind, men resort to occupation and pleasant amusements, and when the mind has become deranged the necessity for such treatment is greater. It is not *inaction* that is desired to accomplish

a cure, but a change of *action*. In recent insanity the mind will not rest, and unless constant and urgent inducements to healthy action are presented, and new channels opened for the thoughts and affections, the patient will indulge in his perverted feelings and distorted ideas, until *dementia* places him beyond hope. It is this condition we wish to prevent, or at least postpone. We desire not to abandon the patient to blind chance, or allow him to grow worse by neglecting to provide every proper remedy."

When his patient shall have been removed to Dixmont, the doctor may look with a larger hope and a firmer faith for a more complete equipment for the battle against the disease with which he is contending.

From what follows, it appears that the insane have not lost their patriotism or their beneficence.

"One hundred and ten shirts were made for the soldiers at Washington, by the patients and employees, the materials having been purchased by the contributions of officers and employees."

4. It must have required labour to make the report of the *Bloomingdale Asylum*. What with one-third of a page of margin at its beginning, and one quarter of a page at the end, it occupies two pages.

	Men.	Women.	Total.
Patients Jan'y 1st, 1861	71	84	155
Admitted in course of the year . . .	60	51	111
Whole number	131	135	266
Discharged, including deaths	58	57	115
Of the discharged, there were cured . .	22	20	42
Died	12	7	19

"Several patients discharged improved," says Dr. Brown, "are known to have recovered after returning to their homes. The deaths were occasioned, in six cases, by acute mania, with great excitement; in two by general paralysis; in two by chronic disease of the brain with partial paralysis; in two by apoplexy; in one by suicide; in five by pulmonary consumption and marasmus; in one by disease of the kidneys. Four patients died within a fortnight after admission.

"While the average number of patients for the year as compared with that of the previous one, is scarcely less, there is an actual diminution of twenty in comparing our present household with that of some portion of last year. This falling-off is occasioned by the wide-spread pecuniary reverses, compelling the removal of many patients to State and municipal institutions."

5. The *McLean Asylum* has been enlarged by the erection of a wing intended for the cases of insanity in its more severe and violent forms. "The apartments are spacious and cheerful, and thoroughly ventilated; and for comfort, elegance, and adaptation to the use designed, are unequalled."

	Men.	Women.	Total.
Patients, January 1st, 1861	91	96	187
Admitted in course of the year . . .	55	56	111
Whole number	146	152	298
Discharged, including deaths	60	50	110
Remaining, Dec. 31st, 1861	96	92	188
Of the discharged, there were cured . .	31	23	54
Died	9	14	23

Died from chronic insanity, 8; general paralysis, 5; typhomania, 3; chronic disease of the liver, 2; phthisis, 2; epilepsy, 2; apoplexy, 1.

Dr. Tyler has devoted nearly the whole of his report to a dissertation upon the psychological condition of the country, as affected by the war.

6. The leading statistics of the report of the *Massachusetts State Lunatic Hospital*, at Northampton, are as follows:—

	Men.	Women.	Total.
Patients, September 30, 1860	137	178	315
Admitted in course of the year	70	52	122
Whole number	207	230	437
Discharged, including deaths	58	47	105
Remaining, September 30, 1861, . . .	149	183	332
Died	15	15	30

Died with phthisis, 9; marasmus, 8; epilepsy, 3; maniacal exhaustion, 2; pneumonia, 2; cancer, softening of brain, typhomania, general paralysis, apoplexy, chronic diarrhœa, 1 each.

In allusion to the number of patients who died "from the slow wasting away which removed so many in the last stages of chronic dementia," Dr. Prince says:—

"Of these cases we have a very large proportion received from the other hospitals at the opening of this institution. This fact will for several years make our mortality larger than the average in hospitals, and also give an extraordinary proportion of deaths from chronic diseases."

It is to be regretted that the number of cures is not stated. We perceive no motive for withholding it other than that, from the proportion of chronic cases in the establishment, it is undoubtedly small. But all proper allowance would be made for that, and it is a pity that the statistics of insanity should not be kept as full and as accurate as possible.

"Our means of amusement have been enlarged by the addition of a bowling alley, containing two boards. An appropriation of eight hundred dollars was made by the last legislature for the purpose, and a substantial brick building has been placed in a convenient spot, containing everything needed. It will soon be finished and occupied, and add greatly to the health and recreation of those for whom it was designed.

"A billiard table was considered such an indispensable article of furniture, that one has been placed in a convenient position (thus far without cost to the institution or the State), in the hope that its importance as a means of exercise, health, and amusement, would be acknowledged, and the means of securing so desirable an article be furnished.

"Under the general head of amusements may be included the usual games made use of as relaxative, besides walking, fishing, hunting, pic-nics, excursions to points of interest, reading, concerts, dances, &c., all of which serve to vary the monotony of hospital life, and excite new and interesting currents of thought.

"The library has been increased somewhat, both by purchase and by donations from friends of the institution or of the patients. New pictures have been added to those which already adorned the walls. A room has been fitted as a reading-room, and supplied with the daily papers, thus supplying a want long felt and regretted."

Several pages of the report are occupied by an appeal for special provision for the treatment of habitual inebriates, but nearly the whole of it is quoted from the writings of Dr. Kirkbride.

The extract given below shows the quality of the water to the use of which the inmates of this hospital are subjected—and this, too, when "there is, upon the grounds of the institution, a never-failing spring of most excellent water, yielding a quantity sufficient, during the greater part of the year, to supply their daily wants."

"I should not feel that I had laid the matter fully before your Board if I omitted to speak of the quality of the water thus scantily and irregularly and expensively furnished. I have already, at different times, drawn your attention to the colour, and I may say the consistency of the article, as it has appeared in the reservoirs. You have found it holding in suspension so much foreign matter as to render it opaque. This matter consists of the natural debris which a rapid stream, supplied by many feeders and flowing through a soil of various composition, always carries with it. To this is added a miscellaneous mass of impurity poured into it by a great variety of manufacturing establishments. The mixture is at times disgusting to the sight and smell, and its effects equally offensive in

the laundry and the kitchen. The precipitation of vegetable matter in the large boilers, as you are aware, will probably soon create a necessity for expensive repairs, by the 'burning' and 'scaling' of the iron where most exposed to the action of the fire."

7. At the *Longview Asylum*, those parts of the numerical history of the hospitals which we are accustomed regularly to reproduce, are represented by the following figures:—

	Men.	Women.	Total.
Patients, November 1st, 1860	151	183	334
Admitted in course of the year	111	76	187
Whole number	262	259	521
Discharged, including deaths	96	68	164
Remaining, November 1st, 1861 . . .	166	191	357
Of the discharged, there were cured . . .	67	48	115
Died	12	14	26

Died from phthisis, 10; general paralysis, 5; maniacal exhaustion, 4; senile debility, 2; apoplexy, 2; epilepsy, 1; marasmus, 1; cerebral congestion, 1.

"Quite a large number died of diseases not directly connected with their insanity. Many of them were very old patients; half of them had been in asylums more than ten years; some were inmates of the lunatic department of the Commercial Hospital, Cincinnati, as far back as 1832, beyond which there are no records of that institution.

"There has been but little sickness in the house originating after the admission of the patients; and there has been entire freedom from epidemics, or diseases of any kind depending upon general causes, such as location, &c. In one respect this has been quite remarkable, although something similar has been observed in other asylums. Intermittent fever has prevailed extensively in the immediate neighbourhood of the institution, and has attacked several of the residents, including the superintendent; but not one of the insane has been at all affected by it.

"Of the whole number of recoveries, ninety-two were of patients admitted during the year; and much the larger portion were brought to the asylum within a month of the commencement of the disease. Of those who had been labouring under the disease one year or more before being brought in, but little over one-fourth recovered."

While treating of the origin of insanity, Dr. Langdon, judging from his own patients as well as from the opinions of other physicians, says "by far the greater number of cases are produced by causes which directly depress the vital energies. This is farther shown by the condition of the great majority, almost all, of the patients when they came into the house. Feeble, depressed, and emaciated, they require tonics and supporting treatment, and generally show improvement in the state of their minds as their physical strength improves."

As the Longview Asylum is intended chiefly for paupers, and as the old establishment, for which it is the substitute, was but poorly provided with the means of moral treatment, we rejoice in the assertion that "during the year there have been many additions to our means of recreation and amusement. Among these are a bowling alley, a magic lantern, a melodeon, singing birds, flowers, and pictures.

The annexed paragraphs are worth reading, both for their further exposition of the moral treatment, and for the discordance of some of the opinions therein expressed with the opinions of some others of the superintendents of hospitals:—

"Once in each week we have had dancing parties, which have been attended by a large number of the patients with evident benefit, in some cases increasing their cheerfulness, exciting more interest in external matters, withdrawing them from the contemplation of their morbid fancies, and stimulating their minds to activity in a new direction. These parties are very much enjoyed, and anticipated with great pleasure by all the patients who are able to attend them; furnish material for conversation both before and after, and seem to be generally productive of good. The same may be said of concerts, which we occasionally

have of an informal kind—music, both instrumental and vocal, having a quieting effect at the same time that it tends to break up their habitual morbid train of thought.

"Religious services have been discontinued for a long time, as they do not appear to have any beneficial effect, and sometimes do positive harm. The religious education and belief of the patients differs so widely that it is almost impossible so to arrange it as not to offend and excite some portion of them when any religious services are held. We have Jews and Christians, Protestants and Catholics, Spiritualists and Infidels in the house, all as firmly convinced of the truth of their own particular belief and as intolerant of any other as if they were perfectly rational, and any appearance of favouring one or the other form excites prejudice and destroys that trust and confidence which is of so much benefit in the treatment of the insane.

"It can hardly be claimed that there is a necessity for religious exercises among persons not able to transact the ordinary business of life in consequence of their disorder of mind. Nor would it be easy to find a person so peculiarly gifted as to be able to conduct such exercises in a manner that would at least do no harm.

"For reasons somewhat similar, no funeral services are had at the institution, the mere knowledge of a death taking place is of itself depressing, and has a pernicious influence on many of the inmates, and to impress it on their minds by funeral services seems to me would be productive of only bad results."

We have taken the liberty to italicise one clause in this extract. Of the 521 patients treated in the course of the year, only 163 were natives of the American continent, while 353 were Europeans.

8. The general items of the register of the *New Hampshire Asylum*, for the year terminating with the close of April, 1862, are as follows:—

	Men.	Women.	Total.
Patients at the beginning of the year . .	88	108	196
Admitted in course of the year . . .	45	41	86
Whole number	133	149	282
Discharged, including deaths	45	49	94
Remaining at the end of the year . . .	88	100	188
Of the discharged, there were cured . .	20	21	41
Died	10	3	13

Died with epilepsy, 5; "dropsy from disease of heart," 1; "disease of the heart originating in rheumatism," 1; chronic pleurisy, 1; exhaustion of acute mania, 1; general paralysis, 1; organic disease of the brain, 1; exhaustion of chronic insanity, 2.

"Much sewing, knitting, and similar work has been done by the female patients, which has a second value, great, though less than that accruing to the labourer herself. This is emphatically true of a considerable amount of sewing and knitting done for the army. No occupation has seemed to afford them more unalloyed pleasure, than that done for the noble and self-sacrificing defenders of our country.'"

The hospital having completed the twentieth year of its operations, the occasion is seized by Dr. Bancroft to give a brief sketch of its history, with reflections suggested by its results. From the account of the proceedings preliminary to the action of the legislature authorizing the construction of the hospital, we take the subjoined extract.

"At length a call was made on the several towns for statistical information as to the number and condition of the insane, and the responses to this call early confirmed their previous convictions. Returns were received from 161 towns. Of these only 20 were without insane persons. In the balance of the towns there were 312 insane, and of these 152 were entirely a public charge; 160 being independent of public charity. Of the whole number, 81, or nearly 26 per cent., were confined in cages, jails, close rooms, handcuffs, or the like. Insanity had existed in these individuals for periods varying from a few weeks to sixty years; the average of the whole being about thirteen and one-half years. In the report

of the committee deputed to collect these facts, made to the Legislature in 1836, they declare 'that the horrors of the present condition of the insane are far from having been exaggerated.'"

The following selections are from the remaining portion of this section of the report.

"The theory and policy of the guardians, as well as the successive physicians, has been to reduce the difference between the wards of the Asylum and a well-regulated household, to the lowest point consistent with safety, and the integrity of the best curative agencies."

"Even in the wreck of reason and responsibility, nature has kindly provided that the human being need not be wholly a wreck. Such is the organization, that, like an automatic machine, when the intelligent, directing mind is cast from its supremacy, still, under a law of habit, if the individual can be under the influence of another mind to keep him in motion, he will follow to a great extent the routine of ordinary life, when, without this exterior influence, he would subside into stupid inaction, and fall under the direction of the mere animal instincts. It is by availing themselves of this principle, that asylums, in cases of the incurable, are able to transform what would otherwise be little more than existence into a life possessing many rational occupations and enjoyments."

"Of the 1927 who have been received into the Asylum, 841 have been restored to mental soundness. * * * It is not easy to calculate the value of the restoration to society of this considerable number of insane, or to estimate the amount of pain and sorrow mitigated or relieved by their escape from a fate more to be dreaded than death. But whatever society, the domestic circle, or bleeding hearts, may realize from these restorations, it is of small account compared with the reinstating of reason in the mind from which it had been dethroned; the restoring of delicate sentiments and affections, the perversion of which had changed the sweets of life to bitterness."

The first Superintendent of this Institution was Dr. George Chandler, afterwards Superintendent of the Massachusetts State Hospital, at Worcester, and now a resident of that city, but retired from active duty in the profession. His successors have been Dr. Andrew McFarland, now having charge of the State Hospital of Illinois, Dr. John E. Tyler, now at the head of the McLean Asylum, and Dr. J. P. Bancroft, the present incumbent. P. E.

ART. XXII.—*Border Lines of Knowledge in some Provinces of Medical Science.* An Introductory Lecture, delivered before the Medical Class of Harvard University, November 6th, 1861. By OLIVER WENDELL HOLMES, M. D., Parkman Professor of Anatomy and Physiology. Ticknor & Fields: Boston, 1862. 8vo. pp. 80.

INTRODUCTORY LECTURES are, for the most part, froth upon the ale of science. As the bitterness and exhilarating influences of the beverage are foreshadowed in the taste and effervescence of the foam, so the nature and the power of the science are often exhibited in that first lecture which introduces it to the attention of the student. The drinker looks with pleasing anticipations upon the bubbles as they rise in his glass, and the student is filled with bright expectations by the sparkling thoughts of the introductory as they fall from the lips of the enthusiastic professor. But as the evanescent foam is blown lightly away and forgotten even before the cup is drained, so the ephemeral introductory is remembered no longer than the hour in which it was pronounced. The specimen, now before us, of this peculiar kind of literature, has been clothed in a more enduring garb than is generally awarded to its fellows, and may possibly eke out a longer existence. It is written in a lively and attractive manner, and abounds in bold, dogmatic statements, which are, occasionally, more satirical, however, than truthful.

The object and the scope of the lecture are thus happily told:—

"Science is the topography of ignorance. From a few elevated points we triangulate vast spaces, enclosing infinite unknown details. We cast the lead, and draw up a little sand from abysses we shall never reach with our dredges.

"The best part of our knowledge is that which teaches us where knowledge leaves off and ignorance begins. Nothing more clearly separates a vulgar from a superior mind, than the confusion in the first between the little that it truly knows, on the one hand, and what it half knows and what it thinks it knows, on the other.

"That which is true of every subject is especially true of the branch of knowledge which deals with living beings. Their existence is a perpetual death and reanimation. Their identity is only an idea, for we put off our bodies many times during our lives, and dress in new suits of bones and muscles.[1]

"'Thou art not thyself;
For thou exist'st on many a thousand grains
That issue out of dust.'

If it is true that we understand ourselves but imperfectly in health, it is more signally manifest in disease, where natural actions imperfectly understood, disturbed in an obscure way by half-seen causes, are creeping and winding along in the dark toward their destined issue, sometimes using our remedies as safe stepping-stones, occasionally, it may be, stumbling over them as obstacles.

"I propose in this lecture to show you some points of contact between our ignorance and our knowledge in several of the branches upon the study of which you are entering. I may teach you a very little directly, but I hope much more from the trains of thought I shall suggest. Do not expect too much ground to be covered in this rapid survey. Our task is only that of sending out a few pickets under the starry flag of science to the edge of that dark domain where the ensigns of the obstinate rebel, Ignorance, are flying undisputed. We are not making a reconnoissance in force, still less advancing with the main column. But here are a few roads along which we have to march together, and we wish to see clearly how far our lines extend, and where the enemy's outposts begin."

The salient points of the sciences of chemistry, human and pathological anatomy, microscopy, physiology, medicine, and surgery, are made to pass before the reader in cursory but piquant review. In the course of his remarks upon chemistry, Dr. Holmes takes occasion to dwell for a moment upon the fruitlessness of attempting to explain the essential nature of chemical affinities and crystalline types, and of determining the identity of the substances with which we deal, and the laws of their combination. In this connection he reminds us of the allotropic conditions of sulphur and phosphorus, and says:—

"These facts of allotropism have some corollaries connected with them rather startling to us of the nineteenth century. There may be other transmutations possible besides those of phosphorus and sulphur. When Dr. Prout, in 1840, talked about azote and carbon being 'formed' in the living system, it was looked upon as one of those freaks of fancy to which philosophers, like other men, are subject. But when Professor Faraday, in 1851, says, at a meeting of the British Association, that 'his hopes are in the direction of proving that bodies called simple were really compounds, and may be formed artificially as soon as we are masters of the laws influencing their combinations'—when he comes forward and says that he has tried experiments at transmutation, and means, if his life is spared, to try them again—how can we be surprised at the popular story of 1861, that Louis Napoleon has established a gold-factory and is glutting the mints of Europe with bullion of his own making?"

As we write there lies at our elbow a curious book from the pen of Dr. Louis Figuier, "Agrégé de chimie à l'Ecole de Pharmacie de Paris." The title of this book runs thus: "*L'Alchimie et les Alchimistes; Essai historique et critique sur la Philosophie hermétique.*" From its concluding pages we learn that seve-

[1] "Occasio enim præceps est propter artis materiam, dico autem corpus, quod continue fluit et momento temporis transmutatur."—GALEN, Com. in Aphorism. Hippoc I. 1.

ral memoirs were read in 1853 and 1854 before the Academy of Sciences, of Paris, the object of which was to show that "*les métaux ne sont pas des corps simples, mais bien des corps composés*," and that "*la production artificielle des métaux précieux est possible, est un fait avéré.*" The author of these memoirs is C. Théodore Tiffereau, "ancien élève et préparateur de chimie à l'école préparatoire de Nantes," who boldly said to the Academy "*J'ai découvert le moyen de produire de l'or artificiel, j'ai fait de l'or*," and endeavoured, by a series of experiments, to convince his hearers that he spoke the truth, and was deceiving neither himself nor them. When the artificial production of gold is thus gravely announced at a sitting of the world-renowned Parisian Academy, as an accomplished fact, we need not, indeed, be surprised at the story of Louis Napoleon's gold-factory.

As we follow Dr. Holmes through his "Border Lines," we meet with passages, here and there, which we are strongly tempted to transfer to our pages. The following passing thrust at the quasi-science, phrenology, aptly illustrates the racy style in which the whole lecture is written:—

"By the manner in which I spoke of the brain, you will see that I am obliged to leave phrenology *sub Jove*—out in the cold—as not one of the household of science. I am not one of its haters; on the contrary, I am grateful for the incidental good it has done. I love to amuse myself in its plaster Golgothas, and listen to the glib professor, as he discovers by his manipulations

'All that disgraced my betters met in me.'

I loved of old to see square-headed, heavy-jawed Spurzheim make a brain flower out into a corolla of marrowy filaments, as Vieussens had done before him, and to hear the dry-fibred but human-hearted George Combe teach good sense under the disguise of his equivocal system. But the pseudo-sciences, phrenology and the rest, seem to me only appeals to weak minds and the weak points of strong ones. There is a *pica* or false appetite in many intelligences; they take to odd fancies in place of wholesome truth, as girls gnaw at chalk and charcoal. Phrenology juggles with nature. It is so adjusted as to soak up all evidence that helps it, and shed all that harms it. It crawls forward in all weathers, like Richard Edgeworth's hygrometer. It does not stand at the boundary of our ignorance, it seems to me, but is one of the will-o'-the-wisps of its undisputed central domain of bog and quicksand. Yet I should not have devoted so many words to it, did I not recognize the light it has thrown on human actions by its study of congenital organic tendencies. Its maps of the surface of the head are, I feel sure, founded on a delusion, but its studies of individual character are always interesting and instructive."

Of homœopathy, he writes:—

"It has unquestionably helped to teach wise people that nature heals most diseases without help from pharmaceutic art, but it continues to persuade fools that art can arrest them all with its specifics."

And again, in reference to changes in medical opinion and practice:—

"The practice of medicine has undergone great changes within the period of my own observation. Venesection, for instance, has so far gone out of fashion, that, as I am told by residents of the New York, Bellevue, and the Massachusetts General Hospitals, it is almost obsolete in these institutions, at least in medical practice.[1] The old Brunonian stimulating treatment has come into vogue again in the practice of Dr. Todd and his followers. The compounds of mercury have yielded their place as drugs of all work, and specifics for that very frequent subjective complaint, *nescio quid faciam*—to compounds of iodine.[2] Opium is believed in, and quinine, and 'rum,' using that expressive monosyllable

[1] A similar change has taken place also in English surgical practice. Sir W. Napier speaks of "that inveterate use of the lancet, which disgraced the surgery of the times"—the early years of this century. Life and Opinions of Sir Charles James Napier (London, 1857), vol. i. p. 153.

[2] Sir Astley Cooper has the boldness—or honesty—to speak of medicines which "are given as much to assist the medical man as his patient." Lectures (London, 1832), p. 14.

to mean all alcoholic cordials. If Molière were writing now, instead of *saignare, purgare,* and the other, he would be more like to say, *Stimulare, opium, dare et potassio-iodizare.*

"What is the meaning of these perpetual changes and conflicts of medical opinion and practice, from an early antiquity to our own time? Simply this: all 'methods' of treatment end in disappointment of those extravagant expectations which men are wont to entertain of medical art. The bills of mortality are more obviously affected by drainage, than by this or that method of practice. The insurance companies do not commonly charge a different percentage on the lives of the patients of this or that physician. In the course of a generation, more or less, physicians themselves are liable to get tired of a practice which has so little effect upon the average movement of vital decomposition. Then they are ready for a change, even if it were back again to a method which has already been tried, and found wanting.

"Our practitioners, or many of them, have got back to the ways of old Dr. Samuel Danforth, who, as it is well known, had strong objections to the use of the lancet. By and by a new reputation will be made by some discontented practitioner, who, tired of seing patients die with their skins full of whiskey and their brains muddy with opium, returns to a bold antiphlogistic treatment, and has the luck to see a few patients of note get well under it. So of the remedies which have gone out of fashion and been superseded by others. It can hardly be doubted that they will come into vogue again, more or less extensively, under the influence of that irresistible demand for change just referred to.

"Then will come the usual talk about a change in the character of disease, which has about as much meaning as that concerning 'old-fashioned snow-storms.' 'Epidemic constitutions' of disease mean something, no doubt; a great deal as applied to malarious affections; but that the whole type of diseases undergoes such changes that the practice must be reversed from depleting to stimulating, and *vice versa*, is much less likely than that the methods of treatment go out of fashion and come in again."

In these very positive assertions of our author, error and truth, we think, are mingled together. That much mischief has resulted from the blind and overweening confidence of this or that physician in such a drug, or such a method of medication, cannot be gainsaid, but that the great radical changes which medical treatment in certain classes of disease has undergone from time to time, is the result merely of fashion or the caprice of practitioners of medicine, is wholly inadmissible. Such an opinion is in itself an insult, not merely to the therapeutic skill, but also to the good sense and integrity of every physician who follows his noble calling as a conscientious man, and an earnest and enlightened student. The professed wit will sacrifice his best friend rather than forego the utterance of a jest. Here and there in the writings of our author, the evidence is patent that the opportunity to enunciate some brilliant expression or mirth-provoking comparison, has overcome the dictum of sober judgment, and ignored the very facts which falsify the witticism. When Dr. Holmes tells us that the "usual talk" about a change in the character of disease has as much meaning as that concerning "old-fashioned snow-storms," he is doubly unfortunate, inasmuch as the facts of the historical record, relating both to disease and climate, are all against him. Let him refer, on the one hand, to the chapter on physical climate, in Milner's "Gallery of Nature," and on the other, to the closing chapters of Dr. Edward Smith's admirable and original treatise on "Health and Disease," noticed by us in the preceding number of this journal. Other works, bearing upon this subject, we might readily cite, but the two mentioned are just at hand, and they contain facts and arguments sufficient to refute the idea so lightly, and, must we say it, so thoughtlessly advanced by our author.

As an eminent medical teacher occupying a high position, and as a writer of great ability and weight, Dr. Holmes should, as he is well able to do, supply his hearers with the good and wholesome wheat of science from which the chaff of error has been carefully and patiently winnowed. J. A. M.

ART. XXIII.—*The Sanitary Condition of the Army of the United States.* By EDWARD JARVIS, M. D., of Dorchester, Mass. 8vo. pp. 36. From the Atlantic Monthly for October, 1862.

THE efficiency of an army in the field will depend as much upon the health, bodily vigour, and vital energy of the soldiery composing it, as upon the excellency of its discipline, the correctness of its drill, and the military capacity of its officers. Hence, in order to have a strong and effective army, ready at any moment to accomplish whatever enterprise it may be employed to execute, it is not only requisite that it be composed of a sufficient number of men, but, also, that each one of these possess in himself the largest amount of force, and vigour, and energy, based upon the most perfect health, of which the human organism is capable. This fact is to be kept steadily in view in the very first steps taken for the formation of an army. The men who are to compose it should all be picked men: selected from out the community because of their particular adaptedness for the business of war. The army will then be made up, in the first instance, of a soldiery in the fulness of strength and efficiency. It will commence with the possession of a much higher average of health and vigour, a far greater power of endurance, of activity, and of resistance to the ordinary causes of disease than is to be found in the mass of men of the same ages in civil life. Now, it is not only necessary that the army should possess, at its organization, this fulness of health and efficiency of power in those who compose it, but that this very state of things be sustained, as far as it is possible, during the entire period it remains in commission—at all times and in all places, throughout weeks and months of labour and privation—in the face of all the numerous causes which are continually in action to cause a deterioration of the bodily force and vigour—a prostration of the strength, and energy, and capacity for endurance of the soldier in actual service.

Admit the truth of the foregoing positions, and their truth is almost self-evident, and we can readily perceive the immense importance of an intimate acquaintance, on the part of the army surgeon, with sanitary science, in its application to the condition of the soldier in time of peace, in camp, or upon the field of battle; that he knows what to do and how to act in order that the entire army may be placed, so far as is practicable, under the circumstances which are best adapted to keep up the necessary fund of vital stamina and activity in the soldiery who compose it.

The hygiene of an army, especially when in the field, differs in many respects from the hygiene of civil life. The soldier is liable to the influence of most, if not all, of those causes of vital depression and disease which threaten the civilian, requiring in the former, as in the latter, to maintain the full standard of health and vigour, the same attention to the air he breathes, the food he eats, the water he drinks, the clothes he wears; the same attention to cleanliness, personal and domestic, and to the means of shelter from cold and excessive heat, the rays of the summer's sun and the wintry storm. In addition to these, however, the soldier is exposed to other morbific and depressive influences peculiar to military life, or consequent upon the change in his habits and modes of life caused by his leaving domestic comforts for the discomforts of the tent, the march, and the bivouac.

"The business of war is not," as Dr. Jarvis very correctly remarks, "constant and permanent, like the pursuits of peace. It, therefore, comes to most managers as a new and unfamiliar work, to which they can bring little or no acquaintance from experience. They enter upon untried ground with imperfect knowledge of its responsibilities and dangers, and inadequate conceptions of the materials and powers with which they are to operate. They, therefore, make many, and some very grave mistakes, every one of which, in its due proportion, is doubly paid for, in drafts on the nation's treasury and on the soldier's vital capital, neither of which is ever dishonoured.

"Military life is equally new to the soldier, for which none of his previous education or experience has fitted him. He has had his mother, wife, sister,

or other housekeeper, trained and appointed for the purpose, to look after his nutrition, his clothing, his personal comfort, and, consequently, his health. These do not come without thought and labour. The domestic administration of the household and the care of its members require as much talent, intelligence, and discipline as any of the ordinary occupations of men. Throughout the civilized world, this responsibility and the labour necessary for its fulfilment absorb a large portion of the mental and physical power of women.

"When the new recruit enters the army, he leaves all this care and protection behind, but finds no substitute, no compensation for its loss in his new position. The government supposes either that this is all unnecessary, or that the man in arms has an inspired capacity or an instinctive aptitude for self-care as well as for labour, and that he can generate and sustain physical force as well as expend it. But he is no more fitted for this, by his previous training and habits, than his mother and wife are for making shoes or building houses by theirs. Nevertheless, he is thrown upon his own resources to do what he may for himself. The army regulations of the United States say: 'Soldiers are expected to preserve, distribute, and cook their own subsistence;' and most other governments require the same of their men. Washing, mending, sweeping, all manner of cleansing, arrangement and care of whatever pertains to clothing and housekeeping, come under the same law of proscription or necessity. The soldier must do those things, or they will be left undone. He who has never arranged, cared for, or cooked his own or any other food; who has never washed, mended, or swept, is expected to understand and is required to do these for himself, or suffer the consequences of neglect. The want of knowledge and training for these purposes makes the soldier a bad cook as well as an indiscreet, negligent, and often a slovenly self-manager, and consequently his nutrition and his personal and domestic habits are neither so healthful nor so invigorating as those of men in civil life; but the government neither thinks of this deficiency nor provides for it by furnishing instruction in regard to this new responsibility and these new duties, nor does it exercise a rigid watchfulness over the habits of the soldier to compel them to be as good and as healthful as they may be."

Independently of the large amount of actual disease and of mortality to which armies are liable, altogether distinct from the suffering, decrepitude, and death caused by the wounds inflicted by the weapons of the enemy, and are incurred alike by the soldier in barracks, in cantonement, and in encampment, and are as certain to be met with, though never, it is true, to the same extent in times of peace as in those of war—the constitutional vigour, the vital force, the power of endurance and resistance of the soldier, are liable to become depressed during periods of actual service, and from causes against which it is not always possible to guard. Among these causes we may enumerate the want of a regular and adequate supply of nutritious and easily digested food, excessive fatigue, interruption of regular nightly repose, exposure without adequate protection to cold, heat, and wet, and often to malarious influences, with numerous other privations, hardships, and discomforts almost unknown in civil life.

Much of the disease and death incident to the military life, and which always reduce to a great extent the efficient forces of an army—causing on the part of the government heavy expenditures, and repeated drafts upon the bone and sinew—the labouring muscles of the community, in order to keep up the forces on guard and in the field to their requisite strength, is, no doubt, due in great measure to preventable causes. Hence, everything which has a tendency to maintain and improve the sanitary condition of an army, whether in peace or during war, demands the serious consideration of the community, of the government, and, especially, of the medical and other officers having the immediate health of the soldiery in their charge.

From what has been already accomplished towards sustaining and improving the vigour, health, and vital energy of the soldier, it is very evident that, as the sanitary laws of the human organism become better understood and the means for their practical application more fully developed and enforced, many of the diseases which are now considered as in some degree the necessary evils of military life, may be effectually prevented.

The sanitary condition of the present army of the United States, it is con-

fessed, is more favourable than that of any army of former times or of other nations. It is possible, we think, to raise it in this respect to a still more favourable grade—to reduce still further the danger of sickness and mortality in our soldiers, to bring it to a still nearer approximation to what it is among men of the same age and stamina of constitution in civil life. There is no reason whatever why in a time of peace the health of the soldier should be less secure, or his life in greater danger, than is the case in the best class of his fellow-citizens at home. Even during a period of actual service much may be done towards improving the sanitary condition of the army by placing it under the care of surgeons well versed in the science of health, and invested with sufficient executive authority to have executed promptly whatever they may deem necessary for sustaining the health and vigour of the soldiery, so far as these measures can be carried out without interfering with any important military movement.

The essay of Dr. Jarvis is one adapted to interest and instruct all who feel any interest in the well-being and efficiency of our army. It presents a series of reliable statistics drawn, as far as possible, from official reports in reference to the ratio of sickness and mortality of military bodies in peace and war compared with the ratio in civil life—and the source and extent of the disease, resulting in invaliding or death, to which they are liable. He examines in detail the supposed danger to the soldier; the sickness and mortality in civil life, compared with the sickness and mortality of the army in peace and in war; comparing the condition, in this respect, of the armies of the United States in the war of 1812–14, for the conquest of Mexico, and during the existing rebellion, with that of the different armies of Europe. The dangers incident to battles upon land and at sea; the want of sanitary preparations for war are inquired into, and the difference between the conditions of civil and military life pointed out. The errors committed by government in respect to its ministrations for the protection of the health of the army and their effects are considered, and a general notice given of the results of the sanitary reforms already accomplished.

The subjects of which the author treats, it is evident, are throughout well selected; all his facts are aptly chosen and carefully arranged and collated; while his general conclusions are fairly deducible from his premises.

D. F. C.

ART. XXIV.—*Dentition and its Derangements. A Course of Lectures delivered in the New York Medical College.* By A. JACOBI, M. D., Professor of Infantile Pathology and Therapeutics, etc. 12mo. pp. 172. New York: 1862. Bailliere Brothers.

THE leading object of Dr. Jacobi in this little volume of lectures, is to prove that dentition, which is a purely physiological process, has been unjustly accused of being the cause of the various morbid phenomena which so frequently occur in conjunction with it. The several morbid conditions so frequently observed during the period of teething, according to Dr. Jacobi, have an origin altogether independent of the act of dentition. In the establishment of this thesis he is necessarily led into an examination of the pathology of the more prominent ailments of infancy and childhood.

Although we cannot say that we are entirely convinced of the accuracy of all the teachings of our author, we nevertheless have been particularly interested in the perusal of his lectures—as well those which discuss the physiological history of the process of dentition, as the series especially devoted to a consideration of the nature and etiology of the affections which usually occur in conjunction with the cutting of the teeth.

It is very evident that the formation, development, and protrusion through the gums of the teeth, are purely physiological acts, and, like all other normal acts of the living organism, are performed, in the healthy subject, without pain, inconvenience, or disturbance of any kind. That, however, in children who are

morbidly excitable—who are badly nourished, and exposed to bad hygienic conditions generally, who are, from any cause, strongly predisposed to the occurrence of morbid action, the process of dentition may become the exciting cause of disease of a most serious character. is so well established by the repeated observations of the physicians of all times and all places, that the fact cannot be gainsaid. That the strictly physiological actions of either of the organs will, under certain predispositions to disease, whether in the system at large, or in the organ itself, give rise to pathological results, is a well established observation; so, also, in respect to dentition, though, under conditions strictly normal, it is accomplished without suffering or disturbance in any portion of the system, it is very certain that, when there is present a proneness to disease, teething is often attended by morbid phenomena, more or less intense—and thus may become the exciting cause of some serious malady.

It is unquestionably true that a large number, we would say the greater majority of infants cut their teeth without any bad symptoms—it is equally true that the morbid phenomena which may be observed to precede or accompany the protrusion of the teeth, are not in every case dependent directly or remotely upon the process of dentition, but that their causes are to be sought for in a predisposition dependent upon the age of the infant, and the peculiar physiological condition then present—the normal predominence of activity in certain of the vital functions, while their production is directly traceable to errors in feeding, deficient personal cleanliness, impure air, defective ventilation, want of due exercise, accidental injuries, and the like. It is not the less true, however, that the morbid phenomena referred to are very generally aggravated by dentition, while the latter, as already remarked, may become the sole exciting cause whenever there exists an abnormal predisposition to morbid action in one or other of the organs. Dentition will also be attended with more or less suffering in those instances in which the evolution of several of the teeth takes place simultaneously or in quick succession, or where there is a deficient development of the jaws.

The foregoing positions will, we are confident, be found fully established by the experience of every observing physician. It is very certain that in the lectures before us nothing has been adduced which in the slightest degree tends to show their inaccuracy. The entire chain of reasoning by which Dr. Jacobi has endeavoured to show that in our estimate of the etiology of the diseases of infancy the action of dentition must be entirely omitted is particularly specious and inconclusive. We do not, however, wish to be understood as including in one general condemnation the lectures before us. On the contrary they are replete with important truths, well set forth, and adapted to remove many errors into which physicians have fallen in respect to the maladies of infant life and their relationship to dentition. The study of these lectures will be found profitable to every one engaged in the practice of medicine. If their publication should do no other good than to put a stop to the unnecessary, often injurious, cutting and hacking of the gums of the infant, which is every day performed, and often repeated several times, at short intervals, in the same subject, under the pretence of favouring by it a more easy and rapid protrusion of the teeth, and in this manner guarding against the occurrence of disease, or facilitating the removal of this when it has already made its appearance, they will have answered an excellent purpose.

"I see few indications," Dr. Jacobi remarks, "for the lancet during the period of dentition. You may cut where the gums are an impediment to the protrusion of a tooth, or where the gums themselves are the seat of a disease giving rise to general symptoms, especially of the nervous system. Thus, inflammation of the gums justifies an incision for the sake of relieving the tension of the tissue. Even mild cases in very irritable children may be treated in the same way. But the incision, especially when repeated, may itself become a cause of irritation, sometimes evidenced by the fact that during the prevalence of follicular or other form of stomatitis the gums will be found covered with superficial ulcerations. I need not add, that while exudative processes, such as diphtheria, are active in the system, every wound inflicted will give rise to new diphtheritic deposits. I, then, scarify the gums in cases of intense local hyperæmia and inflammation —where the loss of a few drops of blood, which can have no effect on either the

healthy or diseased general system, is decidedly advantageous. I should scarify in cases of convulsions in tender, irritable patients, in whom I found the gums swollen, and where a correct diagnosis could be made instantaneously—especially in such as had been once relieved by the same operation: for I must confess that once or twice in my life, not oftener, I have observed the instant termination of an attack of convulsions after I had lanced the gums. But always be sure that the tooth is near the surface. I know that new cicatrices will easily tear, but old ones will not, and I have seen trouble to arise from teeth which were cut down upon weeks or months before they were ready to pierce the gums; a practice always annoying to the child, and useless or even dangerous, and certainly not indicative of much power of diagnosis or therapeutical knowledge in the doctor. It is not uncommon, even, to find a retardation of the protrusion of a tooth when you expected it daily to appear. A child becomes sick, with symptoms of fever and others of a local character; you lance the gums, and not only expect the appearance of the tooth, but a termination, also, of the untoward symptoms. Nothing of the kind occurs. On the contrary, the child gets thinner and sicker, and yet no tooth. Where the system is intensely suffering, where emaciation takes place and nutrition is interfered with, it is but natural that the growth of a tooth should also stop. In such cases you may safely predict that no tooth will appear before the child gets well, or, at least, better. During convalescence the tooth appears. It made its appearance after the organism had been sufficiently restored to allow of phosphate of lime being spared for the building of teeth, but the mother says, that, because the child was well when the tooth came, therefore, the child suffered from its tooth."

"In one of my first lectures, I spoke of the direct injury done to the tooth by incisions. The consistency of the tooth is the less the younger the child; and that harm may be done to a tooth by the action of a hard, sharp instrument cannot be denied. If you expect to effect anything by an incision, you must be sure to divide the gum down to the tooth. But you can scarcely avoid injuring the tooth in cutting down upon it. If this danger exists, and it certainly does, it is the more to be feared from those often repeated scarifications recommended by Marshall Hall, and others. Thus, while your incisions are of no use in the present, they are positively injurious in the future."

There is much sound practical sense in the foregoing remarks—all may profit by them.

We agree very fully with the remarks made by Dr. Jacobi in reference to the leading diseases of the mouth, their etiology and pathology, and their relation to dentition, which in the great majority of cases is merely that of coincidence.

The author's account of retro- or latero-pharyngeal abscess is particularly interesting. He describes it as one of the sequelæ of ordinary pharyngitis. It is attended with rather severe pain, and considerable exudation. A semi-spherical, livid, brilliant tumour being seen or felt on the posterior or lateral wall of the pharynx. Respiration and deglutition are difficult—there is cough, with thickness or hoarseness of voice—emaciation—high fever, sometimes attended with convulsions, which may also be induced by the swelling of the tissues of the neck, and the consequent compression of the venous trunks. The abscess generally forms pretty slowly, and in this may sometimes be distinguished from acute tonsillitis or stenotic disease of the larynx. If the contents of the abscess be evacuated by an incision or spontaneous rupture, the danger of suffocation is removed, and soon all severe symptoms will disappear. The spontaneous evacuation of the pus is not to be depended on; in the majority of cases an incision will be necessary. There is imminent danger of suffocation from the mere size of the abscess, and the attendant swelling of the surrounding tissue, especially the velum palati and posterior nares. Danger may also arise from the extension of disease to the larynx, increasing thus the liability to suffocation, or from the occurrence of grave consecutive diseases, or the Eustachian tube may become affected, and impairment of hearing or total deafness ensue. The danger from the impairment of deglutition is less imminent, want of food can be endured longer than the want of air, while food can be introduced in case of necessity by other avenues than the mouth and œsophagus.

Retro-pharyngeal abscess is seated in the cellular tissue interposed between

the pharynx and vertebral column. The lecturer divides these abscesses into three classes: 1st. The idiopathic, resulting from simple inflammation of the mouth, pharynx, and surrounding tissues, or a metastatic process connected with an acute exanthem, typhoid fever, or pyæmia. The majority of cases occur before or during the first dentition—this period of infancy being that in which there is the greatest tendency to catarrhal affections of the throat. The prognosis is generally favourable if incision of the abscess be not neglected. Metastatic abscesses, however, are of a more dangerous character, being merely the symptoms of a more or less grave affection of the general system. Idiopathic abscesses require in their first stage a rational antiphlogistic local treatment. Cold applied both internally and externally; the first by the slowly swallowing of ice, or gargling with iced water, with or without the addition of alum; the local application of nitrate of silver, or alum, scarifications of the larynx, leeches. When suppuration cannot be prevented, warm poultices are to be resorted to, excepting when there is danger from cerebral congestion; here warm emollient gargles are to be preferred. Internal treatment is available only so far as it is adapted to diminish fever or other dangerous symptoms. When the danger of suffocation is imminent, the abscess should be opened at once by incision and its cavity washed out by gargling or syringing with water, but in the case of what are termed metastatic abscesses, to promote their healing the application of stimulants and astringents is required—such as chlorate of lime, alum, nitrate of silver, tannic acid, while the proper internal treatment must be determined by the nature of the general affection. Bark, and the mineral acids will generally be indicated.

The second form of retro-pharyngeal abscess includes such as result from the suppuration (usually in scrofulous subjects) of inflamed lymphatic glands and the surrounding tissues. They are rarely met with previously to the completion of the period of the first dentition. The prognosis is in general sufficiently favourable, provided the original suppuration is not excessive and the general morbid condition of the system is moderate in extent. The local treatment will be much the same as in the case of idiopathic abscess. The primary attention is to be paid, however, to the original glandular abscess, the pus of which may often be evacuated by an incision from without, with the effect, also, of relieving the consecutive pharyngeal and laryngeal injection. The gravity of the general dyscratic affection calls for serious consideration. The employment of the iodides of potassium and of iron, cod-liver oil, pure air, sufficient exercise, attention to the skin, and a generous diet, will be strongly indicated.

A third form of retro-pharyngeal abscess is dependent upon suppuration seated in the cervical vertebræ or their ligaments, occurring at a period of life earlier than the preceding form. The prognosis in these cases is very unfavourable. The opening of the abscess should be deferred as long as possible; it can only afford temporary relief to the difficulty of respiration and deglutition. The treatment must be by quietude, posture, cold applications, leeches, mercury and wine, nitrate of potassa, tartar emetic, iodide of potassium, and preparations of iron, according to the indications presented in each case. Little dependence, however, is to be placed in any course of treatment, as the disease will in nearly every case terminate fatally, either very suddenly or after the gradual occurrence of great exhaustion attended with hectic fever. Dr. Jacobi knew of one case, occurring in a young man, to terminate suddenly while the patient was in the act of turning his head on the pillow. Examination after death showed the ligaments of the spinal column at its upper portion to be destroyed to within a few shreds, which were torn by the last movement of the patient, allowing the process of the vertebra dentata to enter the foramen magnum and destroy the tissue of the medulla oblongata.

There is scarcely a lecture in the volume before us which does not present matter worthy of especial notice. The entire validity of the views presented by the author in respect to the nature, seat, and causation of the several infantile diseases of which he treats we may not, it is true, be able always to acknowledge; the facts and arguments, nevertheless, by which he has endeavoured to enforce and illustrate them are always deserving of a candid examination, and in many instances they are, it must be admitted, particularly suggestive. We should be

pleased, could we spare the space, to present an analysis of the greater portion of those of the lectures which are of a strictly pathological character.

Dr. Jacobi's exposition of the nature and causation of infantile convulsions are particularly interesting; we shall confine our notice, however, to his account of laryngismus stridulus or the crowing inspiration of children.

The first stage of this affection he refers to the sudden occurrence of complete apnœa. Respiration is suddenly and completely arrested for some seconds; the face becomes bloodless and pale, and, finally, cyanotic, if the paroxysm is of any duration. The skin is cool, and the action of the heart scarcely perceptible, the entire muscular system being, according to Dr. Jacobi, in a state of paralysis. In the second stage he supposes that reaction commences. The recurrent branch of the pneumogastric nerve excites the function of the muscles of the glottis, and the spinal nerves that of the other respiratory muscles, so as to cause a forced, deep "crowing" inspiration. During the third stage reaction becomes complete. By short convulsive expirations the functions of the respiratory organs are restored to their normal condition. Attacks of great intensity and long continuance are commonly attended with contractions of the hands, and even general tonic convulsions of the trunk and lower extremities. In some cases general eclampsia has been known to accompany the attack, but to return without any recurrence of the latter; or the laryngismus may recur without the eclampsia. Involuntary evacuations, caused, as Dr. Jacobi supposes, by paralysis of the sphincter muscles, have been observed during the attack. The paroxysms of laryngismus recur at longer or shorter intervals; several may take place in a single day. The disease is seldom fatal. It may last for months and even years. When death ensues during the attack it is in the first stage.

The mildness or severity of the attacks of laryngismus depend as well upon the constitution of the patient as upon the nature of the occasional causes.

Dr. Jacobi believes that the symptoms of the first stage of this affection can only be explained by supposing a functional disturbance of the nervous system—paralysis, perhaps, of the medulla oblongata, or of the nervous centres generally. Paralysis of the muscles of the glottis alone, he remarks, would not be sufficient to produce all the symptoms of the first stage of laryngismus; these do not occur upon the division of a recurrent nerve. The division of both nerves gives rise pretty rapidly to suffocation, but not suddenly, while the lungs and brain become engorged, whereas the morbid anatomy of laryngitis shows entire absence of hyperæmia of the brain, and little or no blood in the heart and cutaneous veins. Death in laryngismus, according to Dr. J., ensues precisely in the same manner as it does in animals in whom the medulla oblongata has been divided.

The crowing inspiration is very correctly described as a symptom which does not exclusively appertain to laryngismus stridulus; it is met with also in laryngeal catarrh, in which disease the muscles of the vocal cords are spasmodically affected.

We agree fully with our author in the remark that the cause of laryngismus is to be sought for in some affection of the nervous centres. It is very evident that no disease of any portion of the respiratory organs is attended by symptoms similar to those which characterize laryngismus, and in the examination of the bodies of those who have fallen victims to it no lesions of the heart and lungs sufficient to explain its production have been detected. Goelis long ago noticed the occurrence of a mild form of laryngismus in connection with chronic hydrocephalus. Keitel found, besides a hypertrophied and degenerated thymus gland, softness of the skull, with large fontanels and sutures, a softened and hyperæmic condition of the cerebral tissues, with softness of the medulla oblongata and congestion of its membranes, and a tablespoonful of clear serum at the upper portion of the vertebral canal. In one case Marshall Hall found abnormal hardness of the medulla oblongata. Evans relates that, in a child with congenital spina bifida, an attack of laryngismus was produced whenever the fluid in the sac was pressed into the vertebral canal. Caspari found the substance of the spinal cord solid and white, with considerable injection of its dura mater. The sinuses of the brain were enormously distended with thin black-coloured

blood, and the substance of both cerebral hemispheres and of the cerebellum very soft. The phrenic nerves were unusually hard, while the pneumogastric nerve "appeared more similar to the brain." Facts of this kind could be greatly multiplied, showing the dependence, in a large number of instances, of laryngismus upon lesions of the nervous centres. It is to be recollected, however, that diseased conditions of the brain and medulla oblongata, precisely similar to those met with in patients who have perished from an attack of laryngismus, frequently occur without the occurrence of any symptom, even the slightest, of the latter. We believe that, in every instance, laryngismus is strictly a nervous affection, dependent, in very many cases, on disease of the nervous centres, but more frequently upon reflex irritations having their origin in some morbid condition of remote organs. We cannot admit, however, that the condition of the nervous centres giving rise to laryngismus is, as Dr. Jacobi supposes, that of paralysis; we can find nothing in the symptoms, course, and termination of the disease that would seem to indicate the presence of paralysis of certain of the respiratory muscles, but rather in every case their spastic contraction.

There is a morbid condition met with during infancy which, according to our author, is a very fruitful cause of laryngismus; that is, a rachital softening of the parietal and occipital bones, but especially of the latter, to which the term craniotabes has been applied. Kopp, Caspari, Pagenstecher, Hirsch, Keitel, Hachman, Günther, Landsberg, Hauff, Staub, and other of the old writers collected by Elsaesser in his work on the "Soft Occiput," without recognizing the intimate connection of the two morbid conditions, have described cases of laryngismus in which softening of the parietal and occipital bones constituted one of the most prominent lesions. It is very certain, however, that after the most careful analysis of the observations on record in respect to rachital softening of the cranium, that laryngismus will occur in numerous instances where there does not exist a trace of craniotabes. Dr. Jacobi says:—

"I hardly remember a case of my own, in which symptoms of general rhachitis and of rhachidial softening of the cranium were absent in laryngismus; this much is certain, that the majority of cases of laryngismus or crowing inspiration, depend on craniotabes and general rhachitis. It is always the great predisposing cause, and thus, the last and proximate causes of an attack of our disease, as we find them enumerated in the text-books—such as fright, anger, cough, protrusion of a tooth, etc., are assigned their right place of but occasional and temporary importance. By the defective condition of the cranium the brain is more liable to external injuries from concussion caused by quick movements of the head, or an improper mode of carrying on the arm, violent rocking, etc.—from lying on too hard a pillow, from too high a temperature both artificial and solar, and, finally, we must not overlook the importance of such alterations as invariably take place, in rhachitis and craniotabes, in the nutrition of the system and the condition of the brain. At all events you will hardly ever be mistaken in your etiology, when on meeting with a case of laryngismus, you examine for craniotabes. Whenever a child with laryngismus is brought to me, my first attention is given to the occiput and epiphyses, as my first prescription is almost invariably the regulation of the diet and the use of iron."

Our experience in respect to the frequency of the connection between laryngismus and a rachitic condition of the infantile system, with softening and wasting of the cranial bones, differs from that of Dr. Jacobi. We have certainly observed laryngismus to occur often in rickety children, but more frequently in those in whom no trace of a rachitic taint was to be detected. The infants most liable to it are, according to our experience, pale and anæmic, excitable and fretful, who awaken, as it were, in a fright upon the slightest noises made in their vicinity, and who are wakeful, restless, and unsatisfied unless constantly on the move.

The most frequent exciting causes we should say, are sudden and abrupt movements of the child, especially any undue jolting of the head and body, improper food, and an impure, stagnant, or irritating condition of atmosphere. Among these the most effective in the production of laryngismus are the improper quality of the infant's food, and its exposure to malarious influences.

This fact, which is recognized by the major portion of the more recent

English and French writers on the disease, it is important to keep constantly in mind, inasmuch as, in a very large number of cases, it is in vain to attempt the arrest of laryngitis by any course of treatment until the little patient is put upon a proper and well regulated diet, and subjected to the influence of a free, pure atmosphere of suitable temperature. This alone we have often known to suspend the paroxysms, which had previously been of frequent occurrence.

Although laryngismus is a disease of the period of infant life, during which the process of teething is most active, we have no reason for supposing that the latter is a very common exciting cause of it; when, however, the gum over the advancing teeth is greatly swollen, hard and red, the mouth is hot, and the child evidently suffers pain in its mouth, a careful incision of the gum is equally advisable in children labouring under laryngismus as it would be under any other circumstances.

We earnestly commend the lectures of Dr. Jacobi to the favourable consideration of the profession at large. They are replete with instruction in relation to many important points connected with infantile pathology which are not well understood by a large number of practitioners. The author has done ample justice to his subject and its literature, whether the lectures are viewed simply as presenting an exposition of the physiology of dentition and its derangements, or as a general review of the nature, seat, and causes of those diseases which are usually observed during the period of dentition. His object is evidently the attainment of correct views in respect, more especially, to the etiology of the maladies just referred to, and although he may, perchance, have ignored to too great an extent the influence of dention in their production, his teachings cannot fail to have the beneficial effect of directing the medical practitioner to a recognition of the entire want of foundation for the common opinion so long entertained by the public as well as by the profession, everywhere, that teething is usually a painful process, and one of the most usual and efficient of the predisposing and exciting causes of the maladies of infancy. An opinion not simply unsupported by facts, but one adapted to cause, on the one hand, the true etiology of many important diseases to be overlooked; and on the other hand, to lead to the adoption of a practice always useless and often mischievous.

D. F. C.

Art. XXV.—*Addresses delivered by* Dr. Burrows, Dr. Walshe, Mr. Paget, and Dr. Sharpey, *at the Thirtieth Annual Meeting of the British Medical Association, held at the Royal College of Physicians, London, in* 1862. London, 1862. 12mo. pp. 98.

The British Medical Association, it is well known, was formed several years ago by incorporating with the Provincial Medical Association the members of the medical profession in the metropolis. Its recent meeting, the first held in London, was remarkable for the large number of gentlemen who took part in its business, and for the character of the Addresses with which it was opened. These, which have been thought worthy of preservation in a separate form, are contained in the pamphlet before us.

The first of them, delivered by the President, Dr. Burrows, sets forth the grounds which have been made familiar to us in our own State Medical Societies and in the American Medical Association, and upon which the union of physicians for the diffusion of medical knowledge, and the maintenance of the honour and interests of the medical profession, are to be promoted and secured. In England, as at home, it has been found that the medical profession has profited by the existence of the Association in the development of new ardour in the pursuit of scientific discovery, in the improvement of practical medicine and surgery, and in the elevation of the professional status, while its influence upon the national legislature in favour of improved laws for the organization and government of the medical profession has been very salutary. Dr. Burrows sketches very appropriately the tendency of modern civilization to nationalize

all the agencies for intellectual, moral, and national advancement, by substituting for close corporations with exclusive privileges, institutions of a larger scope and a more catholic spirit. Fortunately, in some respects at least, this country was never afflicted by similar drags upon the advancement of the learned professions; while in France they have not existed since the national spirit of her people was fully aroused at the formation of her first republic. It is a gratifying spectacle to see the ancient institutions of science and learning in England yielding more and more to the necessity of opening the avenues of knowledge, and confessing that the gifts of genius and the fruits of scientific inquiry are to be sought quite as often beyond the limits of social and chartered orthodoxy as within them. It appears, however, that in England, as in this country, institutions are to be found which protest by their action against the more generous spirit which incites the profession, and which cling to the ancient paths with a tenacity which renders the purity of their motives suspicious. The orator admits, as has so often been confessed here, that to attempt the removal of such obstructions by legal methods would be injudicious; but he assures his hearers, in the same spirit that has animated American medical reformers, that "if the British Medical Association can, by its numbers and proceedings, carry public opinion along with it, then it has an intrinsic power, equal to any that could be granted by the legislature, and this moral power may be applied to the production of the most beneficial results."

The Address in medicine, by Dr. Walshe, is in every respect worthy of its author, and is beyond comparison the gem of the collection, whether in style, thought, or argument. Its object is stated to be an inquiry into the ultimate causes and the mechanism of the recent progress in medicine. The first of these causes, says Dr. Walshe, is an improved method in observing and recording medical facts. He shows how transitory and insufficient have been all conclusions in medicine which have had any less substantial basis, and defends from the sneers of superficial men that slow, toilsome, and ungrateful labour of collecting the materials upon which alone doctrines can securely rest. He contrasts the deductive with the inductive method, and shows that while the former is appropriate in certain departments of philosophy, it is misplaced in medicine, and has never given birth to any but a short-lived offspring, as most precocious children are who are the idols of their parents and the pests of all the world besides. "History," he remarks, "not only teaches us the absolute failure of all such systems, but shows that, so long as the deductive method prevailed, all progress must, if not solely, at least essentially, consist in the destruction of something gone before. The energies of genius must be wasted in negativing the errors of the past." He might have enforced the doctrine of his theme by those striking lines of the philosopher-poet:—

"Grau Freund ist alle Theorie,
Doch grün des Leben's goldner Baum."

On the subject of "pathological laws," Dr. Walshe has also much sound doctrine. He shows that such laws are not to be claimed as absolute, but only as formulæ expressing the actual state of positive knowledge, the results arrived at by the numerical analysis of accurately observed facts; results which may be more or less modified by the next fact which is added to the series, but which are, nevertheless, infinitely nearer the truth, than any which a different process can evolve. The author proceeds to show how completely the results obtained by this method have achieved the empire of the medical world, and reduced to mere nothingness the theoretical speculations of genius and the authority of mere names, when the one soars from clouds instead of solid earth, and the other usurps a control which is legitimate in nature alone. "No amount of past achievement in an investigator," he remarks, "no perfection of intellectual brilliancy in a teacher, no universality of belief in any particular man's endowments, no humility of 'hero worship,' will save any opinion, any creed, any statement of alleged facts from the critical revisal of the humblest and the newest worker in the field, or protect one or the other from inevitable destruction if that revisal detect a flaw."

Such a course of argument and such illustrations as Dr. Walshe uses to en-

force the leading principle of his discourse, we employed some twelve years ago in an essay on Medical Truth.[1] They had the honour of being pooh-poohed, at the time, by the leading British Medical Review; but as they had even then their advocates, and evidences of their soundness abounded on every side, we were content to await the verdict in their favour which time never fails to award to truth. We then cited the improvements in thoracic pathology due to Dr. Walshe as examples of the fruits which the numerical method of investigation had produced, and we are now doubly gratified in reading his own luminous and convincing exposition of the method itself. Its influence upon English and American medicine cannot be small when directed by so eminent a teacher; for while even truths divine are seldom heeded unless uttered by a voice potential, the dicta of authority find complacent listeners, and obtain a prompt conformity. Even now there are minds which chafe under the constraint of a method of investigation, which, as Bacon said of his own, "levels men's wits and leaves little to their superiority," and who, under the inspiration of an impetuous genius, have struck out theories which captivate the imagination and dazzle the calm and steady eye of reason herself. But these are only sparks and flashes which the ponderous chariot-wheels of truth strike out as she rides onward conquering and to conquer. They are only noisy bursts of vapour which admonish us of her progress, or, perchance, relieve the super-abundant pressure which, but for them, might become dangerous to science itself.

In what Dr. Walshe says to indicate the true position of medicine among the sciences, we have, also, the satisfaction of knowing that we anticipated several of his arguments and illustrations, and set the same limits which he assigns to certainty in medicine, viz., that its truths apply to classes of facts alone, and not to individual instances. Hence, prognosis has ever been the most difficult part of medicine, the despair of the conscientious physician, and the quack's most fertile field; for the one knows that to foretell with certainty is impossible, and the other that a lucky guess will favour his fortune a thousand times more than a false prediction can injure it. But Dr. W. is not content with an affirmative vindication of the certainty of medicine; he not only rebukes the sneer which the members of other professions are apt to affect, or utter in ignorant sincerity, but he shows that the uncertainties in doctrine and practice which afflict medicine are neither greater nor more numerous than belong to every other department of human knowledge. He stigmatizes as it deserves the fact that a statistical investigation into the health of the British army, was intrusted to a captain in the service instead of a medical man. They manage these things better in France; and even among us, outer barbarians as our cousins across the water at present consider us, such an insult to the medical profession would have been impossible. He characterizes with equal plainness the attempt on the part of certain legal members of the legislature to exclude skilled medical opinion in cases of lunacy, for the reason that "the contradictions of medical experts *inter se* are so constant and so flagrant, that jurymen are likely rather to be led astray by the conflict of their opinions, than guided by the clearness of their technical knowledge." That this is a difficulty is not sought to be denied: "But the *onus probandi*, that this difficulty makes the chances of the jurymen failing to reach the right conclusion greater than it would be without such conflict of opinion, rests with those who oppose skilled testimony." And the critics of medical experts are reminded that just as great a conflict of testimony as to matters of fact of the most ordinary kind is daily to be observed, in witnesses whose intelligence and probity are irreproachable. "If the bar were logical," it is added, "they should then plead that witnesses as to matters of fact might henceforth be silenced," and that skilled opinion of every kind should be excluded from court, because engineers, and architects, and surveyors, and all other persons whatsoever, when summoned as experts, are quite as discordant in their opinions as physicians. But most of all is this discordance to be seen among lawyers themselves. The very business of their lives is to assert what others contradict, and to deny what others affirm. If it is said that they do so perfunctorily, and

[1] Elements of General Pathology, &c., Phila., 1848.

not as individuals, what must be thought of the notorious dissidence of opinions in judges upon the bench, whose very office is created to secure, if possible, the agreement of the weightest authorities? A striking example is mentioned of this antagonism in the highest court of England, where, upon an important point of law, brought there by appeal from below, the thirteen judges differed in their decision as much as it was possible; six were in favour of and six against the defendant, and the case was only decided by the casting vote of the presiding judge. "And these are the men," exclaims Dr. Walshe, "who would silence medical opinion in courts of justice, on the plea that it is not consistent!"

He further contrasts the amount of knowledge required by physicians and lawyers; the latter dealing, in the main, with what they themselves manufacture, the former with the mysteries of nature; the one having to expound the works of man, the other to interpret the works of God. But because physicians, when called into court, often disagree in the interpretation of facts, lawyers would exclude them entirely. The Lord Chancellor himself denounces the idea that any one should "have studied medicine in order to determine whether a man was or was not a lunatic, as an *absurdity!*" Again, we must say, "they manage these things better in France," and we might add, in Germany; for in both of those countries the medical expert is an officer of the law, and his investigation of judicial questions within his province is conducted under the sanction of an oath and of his official responsibility.

We cannot follow Dr. Walshe in the concluding portion of his Address, which relates to the opinion of the lay world concerning the relationship of medicine to the general march of civilization. He shows that in this respect, medicine has not been justly dealt with, and especially in regard to the ardent love of truth and the zealous pursuit of it which has distinguished the cultivators of this science. Alone, of lay historians, he says, the late Mr. Buckle has even attempted to render our science and art the justice which they may claim, although he failed in his object because his powers of mind were essentially deductive and, therefore, inapt to comprehend a science which is purely inductive. We believe that the imperfect appreciation of medicine by historians arises from several causes, but chiefly from this that it directly acts on individuals and not on masses. The bulk of history is composed of politics and war, and its chief actors are statesmen and soldiers. It is not only a modern, but a very recent, innovation to introduce into general histories an account of the intellectual elements of civilization. Even literature and art, although so generally attractive, and possessing such splendid monuments to attest and chronicle their progress, have hitherto depended chiefly upon special histories for a record; and we cannot, therefore, complain that the share which the medical profession has had in civilizing mankind should have been usually overlooked by the historians of national advancement. Henceforth, the creative and preservative rather than the destructive powers will demand the chief attention of writers who propose to chronicle the development of national greatness, and among them it will be impossible to neglect the influence of medicine in all its branches, as one of the chief agencies employed to protect, perpetuate, and strengthen society.

Mr. Paget's Address on the Management of Patients after Surgical Operations has all the characteristics which eminently distinguish the works of English Surgeons, and which were so prominent in those of Sir Astley Cooper, and Sir B. Brodie. They may be comprised in two words, common sense. This national trait is one more apt to be displayed in surgery than in medicine; that is to say in material and mechanical procedures which are open to the senses in their operation and results, and rather than in the management of remedies, whose mode of action is doubtful, and is rendered doubly uncertain by the obscurity of the internal condition they are intended to cure. Here the faculties required are more generally the rational as distinguished from the instinctive; the questions to be solved often demand the highest powers of ratiocination for their solution. Doubtless, Mr. Paget is fully able to solve successfully the most intricate of these; but in the present instance he has confined himself almost exclusively to common and practical topics. While he urges the propriety of favouring union of wounds by the first intention, whenever the appropriate conditions for it exist, he dissuades from persisting too pertinaciously in the attempt, lest ery-

sipelas, purulent absorption, &c., may be favoured. Repose and cleanliness he aptly terms the two essentials of cure, but next to these is diet. Equally remote from incendiary methods and starvation plans, he counsels nutritious and varied food, according to the patient's taste and habits, and particularly inveighs against "the monotomy of mutton." It is a judicious remark, that we are too apt to consider reaction after shock as a mark of disease, and as requiring a lowering treatment; whereas, he views this process as a proof of power in the constitution, and, therefore, not to be unduly interfered with. He does not, however, fail to speak of a reaction whose very violence depends upon weakness from anæmia, nervousness, exhaustion, &c., and which must be treated with stimulants, including opium, until the shock is passed. The mortality after operations appears to Mr. Paget to be very indeterminate, or rather undetermined, and particularly because care enough is not taken to discriminate between deaths caused by operations and those which follow operations and occur independently of them or in spite of them. By this way of reckoning the aggregate of deaths set to the account of operations would be very materially reduced; but if it could be honestly determined the interests of science and art would both be promoted. Mr. Paget lauds anæsthetics, and thinks that chloroform is unjustly charged with deaths which should be attributed to shock, even "after operations of no great severity." Unhappily the deaths from this agent are numerous in which no shock existed save that which the anæsthetic itself produced. He next, speaks of phlebitis, inflamed lymphatics, erysipelas, pyæmia, putrid infection, and tetanus, as influencing the result of operations. These affections depend upon the condition and actual morbid proclivities of the patients who are submitted to surgical operations, and their development is determined by the shock or other conditions of the operations performed. In reference to rigors which so generally usher in the secondary consequences of operations, he suggests that their explanation, which is acknowledged to be very difficult, may be sought in their analogy to convulsive affections. In support of this opinion he cites several cases in which epileptiform convulsions took the place of chill, and refers to the frequency with which such attacks usher in febrile affections, especially in children. But however caused, their origin, he maintains, is constitutional, and dependent, along with the conditions which they introduce, upon a morbid state of the blood and tissues; and he notices several among the forms and grades of traumatic pyæmia, some of which are rapidly fatal, with phenomena indicating a rapid and thorough disorganization of the circulating fluids, and others present various degrees of gravity from the severest to the most transient and slight. He very properly classes them with the true eruptive fevers, as blood diseases. As for the remedies for these fatal and troublesome affections, he acknowledges that although quinine will sometimes cut short the attack, he finds only one thing that he can call remedial for the whole disease, pyæmia, and that is, a profuse supply of fresh air.

The Address in Physiology, by Dr. Sharpey, contains a review of the leading features and incidents which have marked the progress of the science in recent times. The great benefits that have arisen from the establishment of schools of physiology are pointed out, especially as these institutions are managed in Germany. In this connection the lecturer felt obliged to descend to an argument addressed to the well-meaning persons who indulge in "indignant but misdirected declamation against experiments upon animals." This reminds us of a similar condescension upon the part of several eminent writers in defending the use of anæsthetics against the cavils of those who could not bear to see parturition deprived of its pangs, lest the fulfilment of the prophetic curse on Mother Eve should be hindered of its accomplishment. For such Pecksniffian objectors the most appropriate argument is contempt. We need not follow Dr. Sharpey in his exposition of the value of microscopical investigations, and of numerical determination in physiology, nor in his sketch of the progress of physiological chemistry. The physiology of the nervous system; that of reproduction; the recent advances in histology; and the prevailing views of the forces of the living organism, are briefly considered, and some of the more important of recent acquisitions to positive knowledge are clearly presented. We are struck, however, with the absence of all allusion to certain names, discoveries, and views, which we suspect that his audience were prepared to hear mentioned. A. S.

ART. XXVI.—*Pathological and Practical Observations on Diseases of the Abdomen, comprising those of the Stomach and other parts of the Alimentary Canal, Œsophagus, Cœcum, Intestines, and Peritoneum.* By S. O. HABERSHON, M. D., Lond. F.R.C.P., Senior Assistant Physician to Guy's Hospital, &c. &c. Second edition, considerably enlarged and revised. London: John Churchill, 1862. 8vo. pp. 594.

THE early demand for a new edition of this work, shows that the profession accord with us in the favourable opinion we expressed of it on its first appearance (see No. of this Journal Jan. 1860, p. 198). In the present edition every portion of the work has been carefully revised, and not only have large additions been made to the text, but a number of cases are given to further illustrate the phases of disease; and a very interesting chapter on peritonitis has been appended.

In the different chapters of the work frequent reference is made to the disease of the serous investment of the intestines, but in the chapter appended to the present edition, the author specially reviews the general forms of peritonitis—describes the pathological appearances presented—enumerates the symptoms by which it is indicated—the causes which produce it, and points out the treatment best calculated for its removal.

Dr. H. first describes the progress of peritonitis from its earliest pathological appearance—congestion of its capillary vessels with loss of its smooth and shining character—to its termination in effusion of serum or pus, and of lymph, causing adhesions of the abdominal contents, or thickening of the membrane from effusion of fibrin within its tissue, &c. &c.

The *symptoms of acute peritonitis*, Dr. Habershon remarks, "are generally very characteristic, as when, for instance, the stomach and appendix cæci are perforated by ulceration, sudden intense pain comes on, the patient is 'doubled up,' unable to move, and lies with the legs flexed; the countenance expresses the intensity of the suffering, as well as the serious nature of the disease; the distress and pain are evident in the features, the eyes are sunken, the face is pallid, the abdomen very shortly becomes distended, tender, and tympanitic; no pressure can be borne, and even the weight of the bedclothes becomes insufferable; the pulse is small, compressible, and if reaction take place from the first sudden collapse, it becomes more hard and frequent, wiry; the bowels are generally confined, especially at the early stage of the acute disease, but sometimes towards the close of the malady diarrhœa may supervene. The urine is scanty, and if the vesical peritoneum be involved, retention often takes place. If the peritoneal surface of the stomach be implicated, vomiting is a frequent and distressing symptom, and green bilious fluid is ejected. The mind may be conscious and strong throughout, even when the powers of life are fast failing, and the pulse scarcely perceptible at the wrist.

"In many cases of perforation the patient scarcely rallies from the first sudden collapse, and death takes place in five to ten hours after the onset of the disease; in other instances, however, the signs of febrile excitement are more evident, as shown by heat of skin, especially of the abdomen, by thirst, and by a frequent and hard pulse. If the disease tend to an unfavourable termination, the prostration increases, the patient is restless, the tongue dry and brown, the pulse compressible, failing, and irregular; the extremities become cold, a clammy sweat breaks out, hiccough comes on, and then death follows, the patient often remaining sensible till the close, and the subsidence of pain, as life is ceasing, occasionally gives to the superficial observer a false hope of recovery. On the contrary, when the vomiting subsides, the pain and distension lessen, the countenance becomes less haggard and dejected, the pulse soft and less frequent, but tolerably firm, and especially, when the patient has refreshing sleep, we may regard the immediate danger as less imminent. Gradually all the symptoms may disappear, and the patient completely recover, with perhaps some peritoneal adhesions and thickening. It may be that effusions take place, which are more gradually absorbed, or become very persistent; again, if fecal

extravasation have occurred, repeated attacks of local peritonitis, with hectic fever, follow, or renewed general inflammation destroys the life of the patient."

The *paroxysmal* occurrence of the pain in strumous peritonitis is noticed by Dr. H. This paroxysmal character is often very striking. We have seen the pain recur with the regularity of a paroxysm of intermittent, the patient during the interval being so entirely free from suffering as to lead to the hope that the disease was arrested; but this delusion would be dispelled at the regular period by the recurrence of pain resembling a severe attack of colic. It may be observed also that in this affection "the bowels are often irregular, the stomach sometimes irritable, the tongue red and injected, the patient fretful, and as the intestines become matted together by adhesions, the viscera move *en masse*, and a doughy sensation is communicated on manipulation. Or these strumous and inflammatory adhesions may be local, simulating abdominal tumours. The indications of disease are also associated with general strumous cachexia, and are often complicated with pulmonary disease. Too frequently hectic supervenes, and this is especially the case when fecal abscess has been produced, and the hope of ultimate recovery is then almost taken away. In strumous peritonitis also the pain may be very slight, whilst effusion gradually takes place to a considerable extent, as we sometimes find in children after measles, &c., or excessive tympanitis may be produced without any acute pain."

The *diagnosis* of peritonitis is not always easy. The pain may not only be absent on account of the peculiar character of the disease, but the patient may be rendered unconscious of it from cerebral oppression or from the dyspnœa and distress of pulmonary and cardiac disease. The author points out the following means of distinguishing peritonitis from the painful conditions of the abdomen for which it may be mistaken:—

"1st. Flatulent colic. The pain and distension are in this disease sometimes very severe, the countenance may be haggard and distressed, and collapse sometimes results; but there is not the tenderness of peritoneal inflammation, the symptoms are less persistent, the pulse less affected, the collapse rarely so profound. 2d. In hysterical affections of the abdomen, the pain is very superficial, and firm pressure can frequently be borne, whilst the patient almost shrieks before the hand has reached the surface; the countenance does not express the distress of serious organic disease, the pulse may be almost unaffected; still, in this disease, we have seen the patient bled from the arm to syncope, with the idea that acute disease existed. 3d. The vomiting and sudden pain of perforated intestine are sometimes mistaken for gall-stone; but the latter disease is free from the acute tenderness and distension of peritonitis. 4th. Neuralgic pain from disease of the spine, of a functional or organic character, often simulates peritonitis; but here, also, there is an absence of tenderness on pressure of the abdomen, of distension and tympanitis, as well as of the general expression of peritoneal disease; the pain is situated in the course of the spinal nerves, and often extends over the crest of the ilium in the course of the last dorsal nerve, or into the groin and testicle in the course of the genito-crural nerve; there are also, generally, some indications of spinal disease in local pain of the vertebræ, with modified motion and sensibility of the lower extremities, and loss of power of the sphincter muscles. 5th. Suppuration of the abdominal parietes is at an early stage very difficult to distinguish from peritonitis. 6th. The pain from the distension consequent on the enlargement of abdominal tumours and effusions may easily be mistaken for peritonitis, as, for instance, in aneurism, in ovarian and cancerous tumours, and in dropsies; but in these cases, as we have before said, peritoneal disease is often set up in the progress of the malady. 7th. During the course of peritonitis, the muscular fibres of the bladder sometimes fail to contract, apparently from loss of power, and the urine is retained, thus closely simulating simple retention of urine; on the contrary, we have also witnessed distension of the urinary bladder from enlarged prostate or other cause, producing pain which resembled peritonitis, and which had been sent to the hospital as a case of abdominal tumour."

Dr. H. divides the causes of peritonitis into three classes:—

"1. Peritonitis produced by the extension of disease from adjoining viscera, or excited by direct injury, including cases of perforation of viscera, extra-

vasation, violence, &c. 2. Peritonitis connected with blood changes, as when inflammation of the serous membrane occurs in the course of albuminuria, pyæmia, puerperal fever, erysipelas, &c. 3. Peritonitis caused by general nutritive changes of the system, which have been followed by acute or chronic disease of the peritoneum, such as struma, cancer, &c.; and comprising also those cases in which the circulation of the peritoneum has been so altered by continued hyperæmia (modifying its state of growth), that very slight exciting causes suffice to induce acute mischief, as occurs in peritonitis with cirrhosis, disease of the heart, &c."

Of 501 cases of peritonitis met with in the *post-mortem* examinations during a period of twenty-five years at Guy's Hospital, 261 were of peritonitis from direct extension, 94 were connected with blood change, and 146 with general or local perverted nutrition.

An important cause of peritonitis is perforation of the intestine into the peritoneal sac, and this occurred in the 501 cases 56 times. 10 times from hernia; 9 from disease of stomach; 15 from fever-ulceration of ileum; 4 from strumous disease; 11 from disease of cæcum and appendix; 1 from cancer of vagina; 4 from cancer of colon; 2 from ovarian adhesion.

With regard to the treatment of peritonitis, Dr. H. thinks that our best guide is the consideration of the origin of the disease, whether it arise, "1st, from extension of disease from adjoining viscera, or from perforation and injuries; 2d, from blood changes, such as occur in albuminuria, pyæmia, and erysipelas, &c.; 3d, from almost imperceptible changes or deficiencies in general nutrition modifying the state of the general health, as in struma, cancer, and climacteric changes; or from the hyperæmia of the peritoneum, consequent on cirrhosis and chronic disease of the heart and lungs, when upon very slight exciting causes, acute mischief follows. In the first form, if perforation have taken place, perfect rest is exceedingly important, in diminishing extravasation, and in localizing the peritoneal mischief; purgative medicines of all kinds should be avoided, and also stimulants, which are often unfortunately given at once, before a medical practitioner sees the patient, in perforation of the intestine. This injudicious attempt to relieve pain by purgatives, carminatives, and stimulants, may deprive the patient of the hope of recovery; for, as we have before said, we have seen castor oil floating in the peritoneal cavity. Food, also, should be abstained from, or only a few spoonfuls administered to relieve thirst; in more chronic forms, not arising from perforation, food of a fluid and bland kind is only admissible; and even when the more active symptoms have subsided, the return to solid forms of aliment must be very cautiously made. When there are symptoms of failing power, stimulants in small quantities may be given, but are best combined with demulcent food, as brandy with arrowroot, &c.

"As regards medicinal treatment, we believe the plan recommended by Dr. Stokes and Dr. Graves to be of the greatest value, not only in cases of perforation of the intestine, but where the peritoneum is acutely inflamed from the direct extension of disease. It consists in the administration of opium in full and repeated doses; and its beneficial result arises from its favouring rest of the intestines and the localization of the mischief, from the mitigation of suffering which it affords, whilst at the same time it alleviates nervous prostration and collapse, and facilitates reparative action. In many instances the opiate plan may be combined with local, and sometimes even with general depletion; anodyne remedies may be applied externally, or counter irritants, as cantharides and turpentine. Local peritonitis is thus greatly relieved by local depletion and external applications, as when produced by ovarian and cæcal disease; but blisters are of value, especially in those instances in which repeated attacks of peritonitis occur. Mercury, either in the form of gray powder, calomel, blue pill, or as mercurial inunction, is, we believe, injurious in all these cases of acute direct peritonitis. It tends to prevent adhesion, it excites peristaltic action, it promotes ulcerative action, it increases the depression consequent on the disease, which is often the immediate cause of death, and lastly, it renders the intestinal contents more fluid, thereby increasing extravasation. We are well aware that many instances of acute peritonitis from diseased cæcum, from enteritis, and from ovarian disease, recover after mercury has been given; but

as far as the causes we have enumerated can be any guide, and from extensive experience in these cases, we strongly deprecate its use.

"Effervescent medicines generally increase the painful distension of the abdomen, but diaphoretics and salines are sometimes of value when combined with opium.

"In the subsequent treatment we must not be too desirous of inducing action from the bowels, and, when necessary, gentle enemata are better than purgatives administered by the mouth.

"When the more active symptoms have subsided, opium may be continued with vegetable tonics or with quinine. If fluid effusions have formed, iodide of potassium and diuretics may be advisable, and the abdominal glands may then be beneficially stimulated by an occasional dose of gray powder or calomel. Preparations of iron are not generally well borne in the convalescence from acute peritonitis. It will often be found that as the health becomes established the fluid effusion rapidly disappears; in other cases the repeated application of counter irritants may be required, and sometimes it is well to remove the serum by paracentesis.

"In the peritonitis of *albuminuria* the best treatment consists in the relief of the general disease by diaphoretic medicines, counter irritation and cupping on the loins, and by free evacuation of the bowels; but mercurial preparations very readily affect the system, producing severe salivation, without corresponding benefit. When effusion becomes extreme, it is better to attempt its removal by puncturing the thighs and by purgatives than by directly emptying the serous cavity. Hot-air baths are sometimes of great service.

"In the treatment of the peritonitis of pyæmia and erysipelas the local disease is to be less regarded than the general one, nor should we attempt to cure the peritonitis of this kind by depletion and mercurial preparations. Opium and salines, with the free use of stimulants, are apparently the best remedial agents we can employ. Typhoid symptoms too frequently come on, and precede a fatal result.

"In *puerperal* peritonitis the same plan of treatment may be adopted. In some cases the blood becomes affected by the absorption of pus; or pelvic phlebitis and cellulitis are followed by the peritoneal disease; and, from the beneficial effect following the internal administration of tincture of the sesquichloride of iron in erysipelas and diphtheritic disease of the throat, Dr. Heslop has recommended the same remedy in puerperal peritonitis, as being a disease closely allied in character. Those cases which we have seen recover have apparently been benefited by thoroughly washing away uterine discharges by the free use of opium, and by stimulants; but we are quite prepared to hear further reports of the good results of the tincture of the sesquichloride. In puerperal peritonitis the use of turpentine internally has been recommended, and has been followed sometimes by a beneficial result.

"In the treatment of acute peritonitis in *struma*, the same rules ought to be borne in mind as in the treatment of strumous pneumonia. Opium is of value not only in relieving the pain and the great nervous prostration so constant in disease of the abdomen, but it also facilitates the recovery of the injured structure. Warmth, anodyne applications, the use of local depletion may be used; purgatives should be avoided, and rest strictly maintained; but mercurial preparations, given so as to affect the mouth, are as injurious in this form of strumous complication as in any other, and it is not necessary to recur to mercury for an aperient remedy, nor to prevent the opiates from checking secretion.

"In the more chronic forms of the disease, the means best calculated to remove the local malady are those suited for the removal of the general state; such as nourishment as far as it can be borne, cod-liver oil, steel as the iodide, steel wine, the iodide of potassium, alkalies, &c. Occasional counter irritants may be used, and moderate pressure on the abdomen employed to promote the absorption of serous effusions; an elastic bandage, strips of plaster, as the adhesive or the belladonna plaster, may be thus applied; in some instances in which I have used the ammoniacum plaster with mercury, the intolerable itching which was produced compelled the removal of the application. Residence at the sea-side greatly facilitates recovery in these cases. In slow strumous

effusion, especially in young persons, after peritonitis, it is often extremely difficult to produce absorption, and paracentesis is sometimes advisable.

"Peritonitis with *cancerous* disease is always associated with enfeebled power and diminished functional activity. Remedies such as diuretics have very little effect in promoting the absorption of fluid, and any measures which still further diminish strength appear to increase dropsical effusion. To sustain the powers of life by every available means is the best preventive against this result. If acute symptoms supervene, the opiate plan of treatment must be followed with rest and bland nutritious diet. If paracentesis be performed, temporary relief may be obtained; but more frequently the patient very rapidly declines, and we then find that the whole of the diseased peritoneal surface has increased in vascularity, and lymph is poured out.

"Peritonitis with cirrhosis is generally found in persons who have been of intemperate habits; the arteries are often diseased, and the kidneys may be granular and atrophied. At an early stage of the disease, when the diet can be regulated, and the excretory functions of the liver, the kidneys and the skin stimulated to increased action, the symptoms may, in a great degree, be alleviated; and when acute peritonitis is set up with cirrhosis, no class of cases are more benefited by the judicious use of the ordinary remedies for peritonitis, namely, local depletion, and mercurials with opium, on account of the stimulant effect which mercurials have on the excretory glands; but all the good effect of mercury may be attained without that remedy being used so as to produce salivation."

In chronic peritonitis associated with advanced cirrhosis, Dr. H. does not hold out hopes of success from any course of treatment. He considers that our measures in this condition can at best be only palliative. "Some," he remarks, "have recommended mild mercurial salivation before tapping, to prevent the supervention of acute symptoms; but we have no experience in such an application of this medicine, and believe, that if tapping be really necessary, mercurial salivation would be detrimental, and would increase the exhaustion which often follows the operation, or that the mercurial cachexia would lead to the speedy reaccumulation of the fluid. Mercurial frictions are less objectionable when used with moderation; and minute doses of blue pill, with tonics, as quinine, or with aperients, are, in many instances of chronic peritonitis from hepatic disease, of great service. Other remedies may also be tried, as diuretics, iodide of potassium, nitro-hydrochloric acid, &c., but the persistent congestion of the vena portæ interferes with their absorption and with their beneficial action. Nearly the same remarks apply to the treatment of peritonitis coming on in the course of chronic disease of the heart and of the lungs. In these cases I never recommend paracentesis, unless compelled by the urgent distress from enormous distension."

Dr. H. does not believe that the benefit generally ascribed to mercury in the treatment of acute peritonitis is an established fact, a doubt in which we must say we do not participate, though we are free to confess that a portion of the relief which has followed its use may be due to the opium with which it is usually combined.

ART. XXVII.—*Anatomy of the Arteries of the Human Body, Descriptive and Surgical, with the Descriptive Anatomy of the Heart.* By JOHN HATCH POWER, M. D., Fellow, and Member of Council, of the Royal College of Surgeons; Professor of Descriptive and Practical Anatomy in the Royal College of Surgeons; Surgeon to the City of Dublin Hospital, etc. Authorized and adopted by the Surgeon General of the United States Army for Use in Field and General Hospitals. Philadelphia: J. B. Lippincott and Co., 1862, 12mo. pp. 401.

A SHORT notice of the English edition of this work was given in the number of this Journal for April, 1861. As the work has now been republished in this country, and more particularly as it appears under the authority of the Surgeon

General, and has been adopted by him for use in the Field and General Military Hospitals of the United States, a more extended notice seems to be required.

In the preface the author says: "The present work has been undertaken chiefly with the view of assisting the student whilst engaged in the study of practical anatomy, and of affording him such practical information in connection with the anatomy of the arterial system, as may be of advantage to him long after his studies have been completed.

"For the purpose of effecting these desirable objects, I have endeavoured to simplify as much as possible the anatomical details, and to bring together such material facts in relation to the operations upon the principal arteries of the body, as may lead to correct conclusions relative to the treatment of the various accidents and diseases to which these vessels are exposed."

He subsequently says, that he has not overlooked the fact that there are many practitioners, particularly those in rural districts, who do not possess any opportunity of refreshing their memories upon anatomical points by actual dissection, and that he is not without hope that, to such, the present volume may afford some useful hints as to the relations of those bloodvessels which, from time to time, may become the subject of their operations.

The description by Dr. Power, of the anatomy of the heart is clear, succinct, and correct. The directions given to guide in its dissection are not, however, as numerous or as judicious as they should be. For example, to see the internal surface of the right auricle, the student is advised to make one incision in a vertical direction through the front of the auricle, connecting the orifices of the superior and inferior venæ cavæ, and a second in a slightly curved direction, the convexity directed downwards, commencing at the lower part of the right auricular appendix, and terminating in the superior extremity of the preceding incision. This purpose is effected much better by a transverse incision from the auricle to the inferior vena cava, and a vertical one beginning at the superior vena cava and meeting the other in its centre. Again, to expose the interior of the right ventricle a V-shaped incision, one branch of which is on the right edge of the heart, and the other along the anterior fissure, is decidedly preferable to an incision in the direction of the axis of the heart, and close to the septum ventriculorum. The figures by which the anatomy of the heart is illustrated are remarkably coarse.

In describing the arteries, Dr. Power gives an excellent account of the origin, the situation, the direction, the form, the anastomoses, and the relations of each particular vessel. Of the manner in which arteries terminate, and of the tissues of which they are composed, not one word, however, is said. The student is left in entire ignorance as to whether the arteries are continuous with the veins, or any other bloodvessels, and as to whether they possess one coat or a dozen. There is another point, moreover, of infinite practical importance, to which no reference is made, and this is, the general relations existing throughout the body, between the arterial system, and the veins, the nerves, the aponeuroses, the muscles, and the bones. A knowledge of them is of the greatest service to the surgeon in assisting in the recollection of the particular relations of every particular artery. As these general relations are quite commonly omitted in works on anatomy, it may be well to enter somewhat into their consideration, in order to set forth more clearly the value we attach to them, and the importance of not omitting them in a work of the pretensions of the one before us.

There is but one vein accompanying the arterial trunk of the body, the neck, the head, and the origin of the limbs; for the arteries distributed to the arm, the forearm, and the hand, and also to the leg and the foot, there are two. When there are two accompanying veins, the artery is always between them; the veins being either to the right and left, or before and behind. The knowledge of the relative situation of these vessels is of great importance in surgery, for it is not always easy to distinguish an artery from a vein, and it is very important to make the distinction when hemorrhage must be arrested by the application of a ligature. There can be no uncertainty in the selection of the vessel, if, after having exposed the three parallel tubes, the operator recollects that the one placed between the others is *always* part of the arterial system. In those places

where the artery is accompanied by only one vein, the vein is generally the more superficial. Thus, the internal jugulars are nearer the skin than the primitive carotids, the subclavian veins are more anterior than the corresponding arteries, and the axillary and the crural veins are more internal (towards the centre of the body) than the arteries of the same name.

The arteries are always more deeply seated than the nerves by which they are accompanied. Thus, the cords of the brachial plexus are nearer the skin than the subclavian artery; the median and cubital nerves cover the axillary artery; the median nerve passes before the brachial artery and places itself then on its internal side; the radial and ulnar nerves are situated, one outside of the radial artery, the other inside of the ulnar, so that these vessels are nearer the axis of the forearm, and the nerves nearer the integuments. On the thigh, the crural nerve occupies likewise the external and anterior side of the femoral artery, and the internal saphenous nerve runs along the anterior portion of the same vessel. To be brief, then, the law determining the respective positions of the arteries and the veins, is also that regulating the relations of the nerves with the arteries; and this law is itself derived from the constant tendency, presented by the arteries, to hide themselves among the most deeply seated parts. The general relations of the arteries, the veins, and the nerves, can be expressed by saying that an incision practised upon one of the limbs for the purpose of dividing these different organs, would meet first the nerves, then the veins, and lastly the arteries.

The general relations of the arteries with the aponeuroses of the limbs; with the muscles, particularly those projecting under the skin by which the course of an artery can often be decided just as from the study of bony eminences, articular lines are recognized; and with the bones, regulating the most favourable places for exercising compression, are of very great practical interest. The general relations of arteries with the common cellular tissue of the body, are not to be overlooked. This tissue is close, when the artery is contiguous to a vein, and on the contrary very loose, at all points where it is in contact with fibrous, muscular, or bony surfaces. From this it happens that the vein and the artery are associated in the various displacements they undergo; and it is owing to this also that in applying a ligature the separation of the artery from the vein is the most difficult part in isolating the vessel, and that when there are two veins the difficulty is much increased. This cellular tissue around the vessels is traversed by numerous small bloodvessels, that supply the walls of the arteries; and when an artery is isolated to apply a ligature, these vessels are torn as well as the surrounding cellular tissue; hence, it is so important, in isolating an artery not to surpass the limits necessary to the success of the operation.

We believe that the importance of the consideration of the general relations of the arteries will be obvious to all, and that we may justly complain at not finding any reference to them in the book here presented to us.

The figures illustrating the anatomy of the arterial system are more neatly executed than those representing the heart.

Beside the account of the anatomy of the different arteries, a description is given of the mode of ligating certain amongst them. Here, again, we think, explanation should have been given of the action of the ligature, together with general rules to guide in its application. It is only by a perfect understanding of general principles and general rules that a particular operation can be safely and skilfully practised. In a work designed for students, wherein the operation of placing a ligature upon certain arteries is described, it seems to us a great omission to have said nothing of the three coats of the arteries, of the action of threads of different thickness upon these coats, of the effect of arresting the circulation of the blood, of the pathological processes that take place in the ligated vessel, and of the instruments that are required in the operation, and the manner in which they are to be used in seizing, isolating, and surrounding the artery with the thread.

As to the several operations described by Dr. Power for ligating the particular arteries, they are by no means such as a student could readily and successfully practise. If we take, for example, the lingual artery, we are told here that it "may be exposed by an incision extending transversely from the os hyoides to

the margin of the sterno-mastoid muscle. The skin, platysma, and fascia being divided, the glistening tendon of the digastric muscle is brought into view; beneath this, and lower down, is the hypo-glossal nerve, much duller in its appearance than the tendon; whilst the artery will be found situated still lower and a little deeper than the nerve" (p. 99). A much safer and surer direction for reaching the artery would be to direct an incision to be made one and a half inches long, two lines above the great horn of the hyoid bone, and parallel to it, through the skin and platysma muscle; the lower border of the submaxillary gland is thus reached. The gland should be turned up out of the way, as a muscle would be, and beneath it the shining tendon of the digastric muscle is seen, embraced by the stylo-hyoides. Detaching these muscles from the hyoid bone, and turning them up, the hypo-glossal nerve is reached; just below this nerve, divide transversely the hypo-glossal muscle, and the artery is found.

When treating of the brachial and the femoral arteries some mention is made by Dr. Power of the employment of compression in the treatment of aneurism of these vessels; but the principles by which external pressure is to be methodically employed, the various instruments to be used, and the satisfactory results to be thereby attained, are not related. This is the more astonishing inasmuch as Dr. Power's work was originally published in Dublin, where so much has been done in this mode of treating aneurism. We can find no mention whatever made of the treatment of aneurism by forced flexion of the limb, nor of the adoption of this position for the arrest of the arterial circulation in cases of hemorrhage in the lower portions of the upper and lower extremities.

The reflections we have made upon Dr. Power's book, as one professing to treat of the descriptive anatomy of the heart, and of the descriptive and surgical anatomy of the arteries, must apply with still greater propriety to the same work when announced as a surgical anatomy of the arteries, and as issued for the use of surgeons on the field of battle and in army hospitals. In such a work a long account of the anatomy of the heart, of the distribution of the branches of the internal carotid, of the circulation of the blood in the liver, and of the pulmonary arteries, is not only unnecessary, but the book is increased in size, and therefore more cumbersome and less easy of reference. This will be found the more annoying, when the work shall be consulted in a hurry, as we must imagine it is intended to be when used on the field of battle, by the absence of an index to its contents.

In conclusion we may say that this work is a good manual for the use of students in pursuing their dissections; imperfect as a guide to aid the surgeon in performing operations, and defective and unsatisfactory as a work for hurried reference. We cannot, therefore, notwithstanding the high estimation in which we hold the approbation of the surgeon-general of the U. S. army, but regard it as unsuited for the purpose for which it has been issued in this country.

W. F. A.

ART. XXVIII.—*The Institutes of Medicine.* By MARTYN PAINE, M. D., LL. D., Professor of the Institutes of Medicine and Materia Medica in the University of the City of New York, etc. etc. etc. Seventh edition. 8vo. pp. 1130. New York, 1862. Harper & Brothers.

WE cordially welcome this new edition of Dr. Paine's Institutes. The continued demand for the work must be received as evidence that it is duly appreciated by a large number of the reading and reflecting portion of the medical profession of our country. These Institutes are not only replete with truths in relation to physiology, pathology, and therapeutics, respectively, but in the doctrines inculcated by the author in each of these departments of medicine, will be found many thoughts of a highly suggestive character, which, if carried out to their legitimate results, cannot fail to lead to a recognition of the important truth that, in all his ministrations, the physician has to do with a living vital organism, all of whose abnormal states are to be received as

the results, immediate or remote, of disturbances of vitality—for the correction of which those remedial agents alone can be effective as act immediately upon living organs, and are capable of bringing about such a modification of their disturbed vitality as shall be adapted to restore their actions, and, as far as practicable, their tissues to their normal conditions.

The present edition of the Institutes does not differ in any material degree from its immediate predecessor, but seems to be printed from the same stereotype plates. Some brief foot notes have been added, and a few addenda, which suggested themselves after the first impression was stricken off, are presented in the form of an appendix at the end of the volume. D. F. C.

ART. XXIX.—*The Hospital Steward's Manual: for the Instruction of Hospital Stewards, Ward Masters, and Attendants, in their Several Duties.* Prepared in strict accordance with existing regulations and the customs of service in the armies of the United States of America, and rendered authoritative by order of the Surgeon General. By JOSEPH JANVIER WOODWARD, M. D., Assistant Surgeon U. S. A., Member of the Academy of Natural Sciences of Philadelphia, etc. Philadelphia: J. B. Lippincott & Co., 1862. 12mo. pp. 324.

THIS little work, after having been approved by a board of medical officers, has been adopted by the Surgeon General of the U. S. Army as a guide to the stewards and other attendants of U. S. military hospitals.

Its contents are divided into five parts, treating respectively of hospital stewards and other hospital attendants, with a general outline of their duties; of the discipline, police, and general supervision of military hospitals; of provisions and hospital stores, and the preparation of food in hospitals; of medical supplies and the general arrangement and management of the dispensary, with some explanations in regard to compounding and distributing prescriptions; and of dressings and those operations in minor surgery performed by a steward or other hospital attendant.

A book of this kind was much needed, and no one could be better qualified for the undertaking than the author of the present. It is well printed in large clear type, and well illustrated. At page 305 is a wood-cut, where the left hand is engaged in doing what Dr. Woodward tells us the right hand should do, and what the right hand generally does do. This is all we have been able to discover not exactly as it should be in this most useful little work.

W. F. A.

ART. XXX.—*A few Remarks on the Primary Treatment of Wounds received in Battle: a Report to the Surgeon General of Massachusetts.* By GEORGE H. GAY, M. D., Surgeon at the Massachusetts General Hospital. Boston, 1862. 8vo. pp. 8.

THE remarks on the primary treatment of gunshot wounds, published in this little pamphlet, are in strict accordance with the teachings, derived from experience, of the best military surgeons in all countries.

They contain nothing original in regard to the treatment of such injuries; nothing but what every one should know well before attempting the practice of his profession.

Nevertheless we believe the publication a useful one, or rather one that would be a useful one, if a great number of the surgeons in this country would read it, and read it too with a belief that others may have a better knowledge than themselves of what is right in medicine. W. F. A.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *The Deep Origin of the Facial Nerve.*—The *Gazette Médicale de Paris* (Nos. 22, 24, 30, 34, 36, and 38, 1862) contains an elaborate memoir by M. A. Vulpian, Prof. agrégé of Med. Fac. of Paris, communicated to the Biological Society, entitled, "Experimental Researches respecting the Effects of Lesions of the Floor of the Fourth Ventricle, and especially on the Influence of these Lesions on the Facial Nerve." The following are his conclusions relative to the deep origin of the facial nerve:—

1. The facial nerve derives its principal origin from a point of the encephalic isthmus situated at the level of the floor of the fourth ventricle, and at a very small distance from the surface of that floor. In the dog, the point of origin is placed about two millimetres astride the central furrow, at the junction of the anterior two-fifths with the posterior three-fifths of the flow. 2. This point of origin is the true centre and focus of the reflex actions of the nerve. Vivisections prove that it is only necessary for this centre to be intact, and the nerve in communication with it, in order that reflex actions of the facial muscles may be produced. 3. The deep origins of the right and left nerves communicate by commisural structures. 4. Certain root-like fibres directly traverse the median raphè, and consequently decussate on the median line. But these fibres are very few in number, and we cannot confidently assign them as the cause of the cross-influence of the hemispheres on the facial muscles. This influence is doubtless chiefly made possible by the considerable decussation between the elements of the two halves of the encephalic isthmus at the median raphè. It is not proved that any determinate part of the decussating elements belongs specially to the facial nerves.

2. *Epithelium of the Air-Cells.*—It is generally believed that epithelium is not present in the air-cells of the lungs. Dr. C. J. Eberth, of Würzburg, does not participate in this belief; in an interesting paper in *Virchow's Archives* (Bd. xxiv. Heft 5 and 6) he gives the following as the result of his investigations.

"1. The air-cells of the lung at their bases and side-walls possess a delicate interrupted epithelium, which particularly occupies the meshes of the vessels. Only the narrow free edges of the divisions of the air-cells are without epithelium.

"2. The compactness of the epithelial layer is dependent on the extent of the air-cells, and the degree of fulness of the vessels.

"3. The projections of the vessels which are found between the epithelial cells have hitherto led to the assumption of a complete epithelium.

"4. The nuclei lying in the capillary meshes, conceived sometimes to be those of the epithelium, at others to be those of the stroma, are the nuclei of the epithelium."

3. *Identity of Hæmatoïdin and Bilifulvin.*—Dr. MAX JAFFE, of Berlin, after alluding to the researches of Zencker, Brücke, Valentine, Kühne, &c., on the same subject, states that he has obtained crystals in a chloroform solution of bile, which in form and all known reactions closely agree with hæmatoïdin. He then proceeds to describe an examination of a cerebral apoplectic cicatrix, which proved that hæmatoïdin and bilifulvin were identical.

This cicatrix, which was of a yellowish-brown colour, and showed under the microscope a large number of crystals of hæmatoïdin, was dried in a water-bath and cut into small pieces. A chloroform extract was made, and was then moistened with a few drops of absolute alcohol, by which the action of the chloroform was apparently facilitated. The extract which contained the cerebral fat was of a deep yellow colour. The chloroform extract was then gently evaporated down in a watch-glass, and for twenty-four hours was placed in a darkened place (for fear of oxidation changes, which, in the case of bilifulvin solutions, take place in the sunlight, and quickly produce changes of colour), and then examined microscopically. It was found to consist of transparent, golden-yellow, beautifully formed crystals, corresponding accurately to hæmatoïdin in form.

On freeing the crystals by ether from fat, a portion of them became dissolved therein (pure ether as well as pure alcohol partially dissolves bilifulvin), the remaining crystals being soluble with tolerable facility in solution of carbonate of soda. The yellow solution became green during filtration. A small remaining portion was treated with sulphuric acid and examined, and the crystals then showed the well known colour-play of biliary colouring matter. Similar changes were observed in the chloroform solution on the addition of sulphuric acid.

From these observations on the microscopical and chemical character of the crystals, the author concludes that hæmatoïdin and bilifulvin are identical, and he points out the bearing which this statement has upon our views regarding the changes of blood-cells in the liver.

Examinations of other apoplectic changes in portions of brain which had been long immersed in spirit did not disclose crystals of bilifulvin.

The fat which remained after distillation of the yellow chloroform extract assumed the shape of margaric acid crystals, and probably mechanically hindered the formation of bilifulvin crystals.—*Brit. and For. Med.-Chir. Review*, Oct. 1862, from *Virchow's Archiv.*, 1861, Bd. xxiii.

MATERIA MEDICA AND PHARMACY.

4. *Action and Uses of Codeia.*—Dr. ARAN, Professor Agrégé at the Faculty of Medicine, and Physician-in-Chief to the Hospital St. Antoine, has lately made some experiments with codeia, and says that as yet he has employed "this alkaloid only to obtain calm and sleep, but from the ten or twelve cases I have witnessed I have been able to discover in this agent sedative and narcotic properties, which in my estimation place it in the first rank amongst the best remedies of this kind existing. To recapitulate in a few words the impression this medicament has made upon me, I will tell you that the codeia seems to me to contain the most marvellous and efficacious properties of opium. Inferior to morphia for calming pains, for this reason only, that it must be given in larger doses to patients; it has, however, over morphia, a marked superiority in that respect, that it never occasions a heavy and agitated sleep; that it does not bring on perspiration or eruptions of the skin, nor trouble the digestion; that it produces no obstinate constipation, no desire to vomit nor any vomiting. For all these considerations codeia appears to me to be destined to become of great service in the nervous diseases of the stomach, and I can tell you that we have obtained with it some calm in cases of gastrodynia, which had defied all other means, belladonna included.

"But it is especially as a means of procuring calm and restoring sleep that the codeia seems to me called to occupy an important place in therapeutics.

Those stubborn and harassing coughs of bronchitis, and particularly of consumption, those violent pains of rheumatism, gout, and the organic affections, of cancer, for instance, which disturb the sleep, and frequently deprive the patients of the least moments of repose, are all forgotten in the midst of the calm and agreeable sleep which codeia procures.

"I have witnessed two very conclusive cases of incurable cancerous tumours, for which no means of relief, at all lasting, had been found. One of these tumours, of an enormous size, almost filled the pelvis, and produced on the passage of the sciatic nerve pains returning at about 8 o'clock P.M., and with such an intensity as to force cries from the patient, who could only become calm but towards the morning, when she would fall asleep, overcome with fatigue. Two centigrammes[1] of codeia produced the first day a calm so complete that the patient thought herself cured, and for the first time since a month she was able to take a somewhat copious meal, her appetite having returned for the first time. During the twelve days I attended this person, the pains were almost nul, and as soon as they reappeared the invalid mastered them with a few centigrammes of codeia; it became, however, necessary to increase the dose by degrees, and from two centigrammes the patient increased the dose to ten and twelve centigrammes.

"To explain how so small a dose produced a calm so complete, I must observe that her weak state rendered her very sensitive to the action of codeia, which, on the other hand, appears to me quite able to be given from the first in a much larger dose than morphia. For example, we have seen the dose of five centigrammes of it in the syrup calming the pains of gastrodynia without leaving the slightest trace of narcotism; and one of our patients takes at present every day fifteen centigrammes of codeia without any bad effect. This invalid, who has long made use of opium and morphia, establishes between those agents and codeia a difference quite to the advantage of the latter, which does not agitate her at all."—*Ed. Med. Journ.*, Sept. 1862.

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5. *Use of Malt and Beer in Therapeutics.*—Malt has been long since used in Germany, and particularly in Berlin, as a popular remedy for bronchial catarrh and dyspepsia. It is, however, not more than a year since the German physicians began to prescribe it after Itustendt, who first announced its advantages.

In France, brewers were accustomed to use a tisane of malt for bronchitis and rheumatism, and lately Dr. Frémy has tried this therapeutic agent for many months on patients in the Beaujon Hospital.

Dr. Frémy received direct from a Berlin brewery the medicinal preparations of the beer, the powder of malt and the malt beer, and with these he made his experiments. According to comparative analysis by Chevrier, essential differences exist between such malt and that in use at the Paris breweries. In the first place, the Paris malt shows no trace of diastase, while that of Berlin contains forty-five centigrammes in every thousand grammes.

The latter also contains a considerable quantity of lupuline, of which there is no trace of the former, as well as a portion of canę sugar, which renders it more pleasing to the taste. We must consequently conclude that the method of preparing such malt is different from that followed at Paris. The malt beer is its concentrated essence. It has the taste of certain English beers, such as Scotch ale, is tolerably frothy, and very aromatic. The malt is taken in the form of a hot decoction, and may be mixed with milk. The beer may be taken hot or cold, and at dinner.

Frémy experimented with malt in that hopeless disease, pulmonary tuberculosis. Of sixty-four phthisical patients submitted to the remedy not one was cured. Five of them left the hospital so considerably improved that they believed themselves well, but auscultation proved that the cure was far from complete. In the remainder, the local state continued as before, the phenomena of auscultation remained unaltered; while in both cases the general phenomena of phthisis, viz., perspiration and diarrhœa, were modified for the better. But if, in decided

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[1] One centigramme is equal to one-sixth grain.

phthisis, malt gave equivocal or no results, it was otherwise in suspected pulmonary catarrh, in incipient tubercles, in which cases it was employed with success.

A man of 25 years of age had a cough for many years, had visibly become thin, and upon auscultation and percussion presented clear signs of tubercular deposit on the apex of the two lungs. He had derived no benefit from the use of cod-liver oil, nor from any other of the usual remedies, when, by Frémy's advice, he was treated with beer and powder of malt. After two months of this treatment, it is attested by Frémy, that his cough had disappeared, respiration was more fully performed; the resonance had become less obscure; the murmur gentle and equal; his appetite was excellent; his strength and flesh had returned.

The decoction of malt produced the highest benefit in febrile bronchitis with hoarseness, and the symptoms were sometimes subdued in forty-eight hours. It was equally useful in chronic pulmonary catarrhs, and especially in those which produce grave dyspeptic accidents in old people. The malt in these cases rapidly excited the digestive powers, and cured the bronchitis. In dyspepsia, also, it was no less successful, after the gravelly complication had been removed.

From such observations, Signor Frémy concludes that malt possesses a double therapeutic virtue; the one, laxative, demulcent; the other, tonic, restorative, analeptic. In fact, according to experiments by Bidault, if powdered malt be macerated for an hour in water at 75 cent., a liquid is obtained charged with syrup of starch (glucose), and what is more extraordinary is, that in this liquid is found free gluten. To this syrup of starch the decoction of malt owes its laxative power, and in that it would differ little or nothing from Hippocratic tisane;[1] but the gluten, which is free in it, and in a state which offers the greatest facility to being absorbed by the digestive organs, the diastase, and the bitter principle of the lupuline, give an analeptic virtue to the malt, and make an anti-dyspeptic of it. These united virtues render malt a valuable medicine, one of great utility in numerous cases, and which ought not to be surrendered entirely to vulgar medicine.—Translated by M. DONOVAN, for *Dublin Med. Press*, from *Lo Sperimentale*, Fas. vii.

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6. *On Some Local Anæsthetics.*—Messrs. DYCE DUCKWORTH, and RICHARD DAVY, record (*Edinburgh Medical Journ.*, July, 1862) the results of some interesting experiments made by them with certain local anæsthetics. They employed chloroform in the form of liquid and vapour; ammonia in vapour and liquid; chloracetization and ice.

They relate the following experiments made with *chloroform*:—

"Exp. 1. *Vapour.*—We applied the vapour to our arms in test tubes for periods of ten and fifteen minutes. In about three minutes a feeling of coldness was experienced in the parts operated upon, the skin becoming reddened. This sensation merged into one of slight irritation, but never amounted to pain. In from ten to fifteen minutes, on pricking the arm, sensibility was decidedly diminished, though not abrogated. Subsequently no local signs of irritation remained.

"Exp. 2. *Topical Application of Chloroform in the form of Liquid.*—We applied chloroform on lint, and in test tubes, to the backs of our hands and arms for periods varying from ten to thirteen minutes. Very soon an irritative action commenced in the part, gradually increasing and becoming slightly painful for about seven minutes, when the pain began to diminish, and a sense of heat remained in the part, with well-marked redness. On pricking the arm in one case, it was found totally insensible to the stimulus for the space of half a minute, after which sensibility gradually returned. In the other case, total anæsthesia was not produced—the application, however, being maintained for ten minutes only. The sensibility was nevertheless greatly diminished. In both cases per-

[1] Hippocrass is a kind of a spiced wine formerly much in use in England and other countries.—*Translator.*

sistent redness remains, the line of pressure being especially well-marked, and the parts continue super-sensitive if touched."

The following experiments were made with *ammonia.*

"*Vapour.*—Mr. Davy applied the vapour of the liquor ammoniæ fortissimus to the back of his arm for ten minutes; very slight tingling ensued. No anæsthesia nor signs of irritation.

"*Liquid.*—He next applied a mixture of equal parts of liquor ammoniæ fortissimus and water to the flexor surface of his forearm in a wide test-tube for ten minutes. Irritation commenced immediately, and increased gradually up to the time of removal, when perfect anæsthesia resulted. This, as in the case of liquid chloroform, quickly disappeared. The cuticle was found to be detached from the cutis vera. Irritation continued at the part for ten days afterwards."

With regard to *chloracetization* they say: This "was introduced by M. Fournié, who communicated his results to the French Academy not very long ago. He announces that the most perfect anæsthesia can be produced by mixing equal parts of chloroform and glacial acetic acid in a vessel, filling it half-full, maintaining the mixture at the temperature of the hand, and the room in which the experiment is performed at a temperature of 62° Fahr. The mixture is to be applied to the sound skin; the part to be acted on being marked off by a piece of diachylon plaster. In five minutes, under these circumstances, total anæsthesia is to be looked for. Upon the rapidity of its action, and the slight inconveniences occasioned thereby, are based the merits of this method. We were much interested in reading Mr. Fournié's announcement, and determined to give it a fair trial. We therefore complied with all his directions, and proceeded to try chloracetization. Two drachms of glacial acetic acid and a drachm and a half of chloroform were put into an ounce test-tube, warmed to the heat of the hand, and then applied to the skin of the forearm. In from ten to fifteen seconds, the most intense and violent smarting commenced in the part, increasing to such a degree that it was *perfectly insufferable*, and we were instantly compelled to apply active cold douching to the parts. The pain was excruciating; the cuticle was uplifted, and the surrounding parts deeply reddened. Some drops which escaped from the tube, lighting on the forehead of one of us, caused most violent pain. The smarting continued severe afterwards, and the parts assumed the appearance of urticaria. The pain was of a stinging character, intense and prolonged like that of nettles. This was due evidently to the presence of acetic acid, which produces symptoms quite analogous to its homologue, formic acid, an irritating ingredient in the glands at the base of the hairs in various species of stinging urticas. Chloroform assists the action of the acetic acid, severe enough in itself, by favouring its absorption; and we know that a solution of extract of belladonna in chloroform acts with tenfold greater rapidity than an ordinary one. On the whole, then, we have no reason to be pleased with chloracetization. In the course of the white mark produced no pain was felt; this white mark differs from the white form of inflammation (due to capillary paralysis), in being caused by the raised cuticle. When deep pressure was made, acute pain was felt. We cannot conceive it possible for the mixture to be tolerated for five minutes on any part, as M. Fournié directs; our mutilated arms still bear testimony to its severity.

"*Generalizations.*—As to the physiological actions of these various articles, we are inclined to the belief that they do not produce their effects till an action, amounting to one of revulsion or counter-irritation is brought about; or in other words, that their anæsthetic effects are due, and contemporaneous in a measure, with a counter-irritative action, since a varying amount of irritation in all cases precedes the anæsthesia. We mean by counter-irritation the production upon the surface of a powerful impression, which seems to be capable of arresting and diverting, as it were, the attention of the system, and thus for a time checking or relieving a morbid process.

"Also, in the case of the human subject, we believe the local application of chloroform *in vapour* to possess the feeblest anæsthetic powers. *In the form of liquid* the effects, though transient, are much more strongly marked. The same remarks apply also to the liquor ammoniæ, excepting that the results obtained from *its vapour* were negative."

The experiments with *ice*, according to the plan of Dr. J. Arnott, were very satisfactory; and they say "it becomes a question whether employment should not be more frequently made of freezing mixtures, prior to *superficial operations* in surgery. Of course it can only be expected to act in superficial cases. In private practice it is especially a desideratum to abrogate pain, even in the minor operations; and in many of these the employment of chloroform by inhalation is hardly called for, or indeed warranted, since we find that statistics show a greater mortality to occur from the use of chloroform under these circumstances. We may here instance some operations which might be painlessly performed by this method:—

"1. The operation for *onyxis;* the toe being surrounded by the mixture till anæsthesia be produced.

"2. The removal of small superficial tumours. This division is a very comprehensive one, embracing the removal of malignant, cystic, benignant, and other growths.

"3. The opening of abscesses; both acute and chronic when superficial; including anthrax and furunculi.

"4. The operation for paraphymosis.

"5. The operation for femoral hernia; it being a common practice to apply ice locally to facilitate the taxis.

"In such cases we consider *ice* to be without doubt the most valuable form of local anæsthetic, from its admitting of simple application combined with the most satisfactory results."

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7. *Phlorydzine.*—This neutral principle, which exists in considerable quantities in the bark of the root of the apple, plum, and cherry tree, is recommended (*Dublin Quarterly Journ. Med. Science*, Aug. 1862) by Dr. DE RICCI as being tolerated where neither quinine nor salicine, nor bark, can be administered without bringing on serious nervous excitement. The cases in which he has employed this article with most success are those of atonic dyspepsia in delicate females. He has also found it extremely well adapted to the treatment of young delicate children, or when recovering from hooping cough, infantile fever, etc. He has given it in these cases combined with syrup of phosphate of iron and manganese, and with syrup of iodide of iron. He gives it in doses of five grains three or four times a day for adults, and proportionally smaller ones for children.

He recommends a trial of this remedy "in every adult case where quinia is not easily tolerated, as also in every case where young children require a tonic treatment either in consequence of constitutional debility, or from the debilitating effects of some previous illness; it is much more easily taken than either bark, quinia, or salicine, the bitter being of an agreeable kind, and changing, as I said above, into a sweetish taste, with the flavour of apples. I have never known it to disagree, even in large doses of 10 grains three or four times a day; and I have, in very many instances, found it of great use where other tonic substances could not be taken.

"In prescribing phlorydzine it must be borne in mind that it is almost insoluble in cold water; but the addition of a very small quantity of ammonia instantly dissolves it; thus, by adding to an eight ounce mixture, containing a drachm of phlorydzine, a few drachms of aromatic spirit of ammonia, the fluid, which previously was milky, becomes perfectly clear; and the addition of the aromatic spirit rather improves the mixture than otherwise.

"If a small quantity of phlorydzein be previously added to the water its solving power is increased, and the mixture will be of a beautiful blue colour, but it will not dissolve as much phlorydzine as when aromatic spirit of ammonia is employed."

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8. *Carbazotate of Iron.*—Mr. H. N. DRAPER gives (*Dublin Med. Press*, Dec. 3, 1862) an interesting account of this new preparation of iron. The following are the more important points.

The mode of preparing it is as follows: Crystals of pure carbazotic acid are digested with an excess of recently precipitated sesquioxide of iron and water

at a gentle heat until the acid has disappeared. The whole is then transferred to a paper filter, and when the deep yellow solution of carbazotate has passed through, the residue on the filter is to be washed with hot water until the filtrate becomes colourless or nearly so. The washings being added to the original solution, the whole is evaporated to dryness at a temperature not exceeding 212°.

Physical Characters.—Thus prepared, carbazotate of iron presents the appearance of a reddish brown, amorphous mass, which, when reduced to powder, becomes lighter in colour. Its taste is astringent and intensely and persistently bitter.

The chemical constitution of the salt, Mr. D. thinks, is three equivalents of carbazotic acid (C_{12} N_3 H_3 O_{14}) united to one of sesquioxide of iron.

"*Physiological Action and Therapeutic Use.*—Carbazotic acid and its salts appear to possess very decided tonic and antiperiodic properties, and will most probably prove on more extended trial valuable and economical substitutes for quinine. In large doses the acid is poisonous; according to Taylor,[1] ten grains have sufficed to kill a dog in less than two hours.

"In the hands of Drs. Calvert and Moffat,[2] the carbazotate of iron has proved very successful in the cure of cephalalgia; the same authors have also employed with good effect the ammonia salt in the treatment of anæmia, intermittent fever, and hypochondriasis, and combined with opium and gallic acid in obstinate diarrhœa. They observe that while the acid itself is liable to produce cramps, its compounds with bases are free from this objection. The dose of the salts employed by these experimentalists was from .05 to .10 gramme (¾ to 1½ grain) per diem.

"More recently, Mr. Alfred Aspland,[3] of the Ashton Royal Infirmary, has, at the request of Dr. Calvert, tried carbazotic acid and its salts on a more extensive scale, and with a success which should encourage further experiment. Mr. Aspland treated forty severe cases of ague, giving the acid in doses of a grain three times a day, gradually increased to four grains at each dose. Some of the patients were relieved in forty-eight hours, while in two cases the treatment had to be continued for nine weeks. Mr. Aspland has also employed the acid with good results in diabetes, in anæmia and prostration from loss of blood in infantile marasmus, in rickets, and as a tonic in cases of debility, and where quinine is usually given; also in dyspepsia and hypochondriasis. He states himself as unable to decide whether the salts of carbazotic acid or the acid itself act better, and does not allude to any inconvenience resulting from the use of either beyond the peculiar colouration of the skin always attending the continued use of this remedy.

"The iron salt will probably be found from its ready solubility one of the best forms of administering carbazotic acid, and especially suitable as a substitute for the combination of quinine with ferric salts. It should, on account of its intensely bitter taste, be administered in the form of pills.

"A most remarkable result produced by the continued exhibition of this acid and its salts is that the skin and conjunctivæ of the eyes become dyed of a deep yellow hue, and the urine acquires an orange colour. This effect is, according to Drs. Calvert and Moffat, generally brought about in a time varying from two to sixteen days after the commencement of the treatment, or when about fifteen grains of the acid have been taken, and they are inclined to attribute the failure of Braconnot in producing this colouration, to the fact that he employed the potash salt, which is almost insoluble. Mr. Aspland, whose experiments have been cited above, finds that the skin becomes most easily tinged in robust subjects, and more in adults than in children. The urine, on the other hand, is more coloured in these cases. The skin in the best dyed cases clears in two or three weeks after the remedy has been discontinued.

"*Dose.*—From half a grain to two grains, gradually increased."

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[1] On Poisons, p. 793.

[2] Pharm. Journ., vol. xvi. p. 167.

[3] Med. Times and Gazette, vol. ii., 1862, p. 289.

9. *Iodized Coffee of Hutet.*—The basis of the new iodic preparation is roasted coffee, a substance in daily use as an aliment, and with most persons a favourite, with some of the principles of which iodine combines in rather a considerable proportion. To attain the desired object, it suffices to mix the requisite quantity of iodine with a sufficiency of the watery infusion of coffee. The taste of the product does not reveal the presence of the new body. This, however, is easily detected by chemical reagents, when it is acted on as is directed for the examination of iodine in combination: for when tested with starch alone, there is no indication of it, it being necessary to treat the coffee previously with chlorine. The iodized coffee, which contains five centigrammes to every spoonful, a very large proportion, has neither colour, taste, nor smell different from ordinary coffee. The use of this coffee taken in doses of one or two spoonfuls a day, for several days in succession, did not produce any intolerance (stanchezza) of the stomach: a certain quantity of the iodine was absorbed, and its presence was recognizable in the urine of the persons who used it.

The employment of this iodized coffee can scarcely fail to answer its intention, it being possible to regulate the dose according to the wish of the physician. It may be taken with sugared water, or better with milk, in which case it becomes an integrant part of the alimentation.—*Dublin Med. Press*, from *Annali di Chimica Maggio.*

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10. *Syrup of Carbonate of Iron.*—Mr. H. N. DRAPER gives (*Dublin Med. Press*, Dec. 3, 1862) the following formula for the preparation of this, which he considers a great improvement upon the usual form.

"Carbonate of iron readily dissolves in simple syrup, and as the sugar exercises a completely preservative influence upon the salt, this is one of the best forms in which it can be exhibited:—

Protosulphate of iron . . .	2 ounces.
Carbonate of soda in crystals . .	2½ "
Water	2 pints.
Sugar	4 ounces.

"Dissolve the sulphate of iron and half the sugar in one pint, and the carbonate of soda and the remainder of the sugar in the other pint of water, mix the solutions, allow the precipitate to subside, and decant the supernatant fluid. Then rapidly wash the precipitate by decantation, using for the washing the whole of the following solution, but dividing it between two operations:—

Sugar	5 ounces.
Water	20 "

"Next digest the washed precipitate in a sufficient quantity of sugar solution of like strength, agitating it repeatedly during some days. When it has all dissolved add—

Sugar	38½ ounces.
Water	19 fluidounces.

"Boil to a specific gravity of 1.262 (at boiling point) and flavour with tincture of lemon or orange peel. This syrup contains about ten per cent. of carbonate of iron, is nearly colourless, and without unpleasant taste.

"*Dose.*—One fluidrachm."

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11. *The Permanent Voltaic Current as a Therapeutic Agent.*—Dr. HIFFELSHEIM has published a work ("*Le courant Voltaique continue permanent, &c.*") which contains an account of his important researches into the effects of "dynamic" electricity upon the body. The following are the most important conclusions: 1. It is not desirable, except for the purpose of *cauterization*, to employ any voltaic combination of which the metallic elements present large surfaces, for such an apparatus produces a current too strong and disorganizing. The surface of the zinc element should not be so large as eight-tenths of a square inch, at least with any more powerful exciting liquid than pure water; but the number of elements of the pile must be increased, in order to overcome the resistance of the tissues. 2. It is desirable that the passage of the current should be as little felt *by the skin* as possible. M. Hiffelsheim recommends that the conducting plates which are applied to the surface of the body should be

gilded, and that they should not be kept moist as was formerly recommended. 3. The current, imperceptible by the skin, may be appreciated by the interposition of a voltameter, in the course of the circuit; and the author prefers for this purpose an apparatus for the decomposition of water. The amount of voltaic action may be computed, either by estimating the quantity of hydrogen produced, or the quantity of water which has disappeared, in the twenty-four hours. A current, thus carefully graduated, may be continuously applied during the greater part of each twenty-four hours, and its action in this respect is much more efficacious than that of ordinary "continuous" currents, which can only be applied for a short time.—*London Med. Rev.*, Oct. 1862.

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12. *Electro-galvanism or Galvanic Electricity.*—Dr. W. H. Sandham, of Cork, extols (*Dublin Med. Press*, November 12, 1862) the therapeutic powers of galvanic electricity. He says: "From my experience of electricity, I have come to the following conclusions: 1st. Whenever, in the treatment of disease, an antispasmodic or calmative, a soporific, stimulant or tonic is indicated, galvanic electricity ought not to be dispensed with. 2d. It is valuable as a means of diagnosing disease. 3d. It is a very useful agent to put the system in the best possible state to receive and be acted upon by medicine. 4th. No matter whether the case suited its application or not, in no instance did I see the slightest unpleasant symptom or derangement, that could not be at once remedied, follow its administration.

"I have used it in colic, neuralgia, sciatica, *delirium tremens* (*by the by a disease for which I have not yet read or heard of its being used or suggested by any one else*), fever, or at least cases with every symptom of fever present, dentition, hooping-cough, convulsions, lumbago, burns (to relieve the pain), headache, toothache, gout, cerebral disturbance, the latter so interesting and inexplicable, and in all with decided benefit. The length of time for which a patient suffered seemed of no serious moment when it exactly suited the case, whether the malady was recent or of long standing, it indicated more or less control in every case in which I tried it. In fine, could I but succeed in making permanent the good results that in almost every case I have for a time produced, I would look upon galvanic electricity as nothing short of a *wonderful* remedy." * *

"In my humble experience, electricity in its vibratory, intermittent, or shock form, is *not near so generally useful*, except in local paralysis, as what Dr. Golding Bird calls the single current, but what is better described as '*the continuous current without shock*.' This, in my mind, is the great tonic, calmative, antispasmodic, and antineuralgic electric current, whose beneficial results are apparent, in many cases, in a few moments, and does not, as is the case with Dr. Neligan's shock current, require a *long time* for the development of its effects, as my cases will incontestably prove. Dr. Golding Bird, Physician to, and Lecturer on Therapeutics at, Guy's Hospital (*vide Lancet*, vol. ii. xvii. 1851), says: 'Shocks are not required to develop physiological phenomena or therapeutic effects, as the laborious researches of Dr. Marshall Hall have long since proved, and it is only to *the mild continuous* voltaic current that we must look for a *vast* development of therapeutical influence.'

"I both use and look upon electricity, in whatever form it may be administered, as an *auxiliary*—but in my mind a very powerful auxiliary—to the other modes of treatment. Let it not for one moment be supposed that I look upon electricity as a universal remedy. No. I treat my cases medico-galvanically, invariably giving the medicines which in my opinion are indicated in each case. Having never read or heard of galvanic electricity being recommended or suggested as a remedy for the cure of dipsomania or delirium tremens, I beg to draw particular attention to the four first cases; they were treated by 'the mild continuous current without shock,' as administered by the aid of 'Pulvermacher's apparatus;' I do so in the hope that other gentlemen may, in a short time, give us their experience, and thereby still further establish or set aside the use of galvanism in this dread disease. You may rely on the faithfulness of my report; indeed, you have (Case 3d) reported and certified in the words of one of my patients, and as it is the history of the only case treated by me *with-*

out medicine of any kind, I refrain from recording it in any other form than that of the certificate itself. It is true to the letter, and describes accurately all that I did for him.

"The 'wet brain' and the 'congested brain,' induced by alcoholic poisoning, are generally treated by large doses of opium, with or without depletion, or, as advocated by some, on the expectant plan. We all know how near to death perseverance in large doses of the former oftentimes bring the patient. Now, if galvanism would enable us to cure delirium tremens, by giving with it smaller and consequently safer doses of opium, it would be a desideratum; but I hazard the opinion that opium and galvanism act in antagonism to each other, and would rather, therefore, use the one without the other. Dipsomania or delirium tremens is a state of things induced by *over excitement* or over stimulation of the nervous system."

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

13. *Further Observations on Typhus and Typhoid Fevers, as seen in Dublin, especially the united form which they assumed during the first half of the year* 1862.—In 1860, Mr. HENRY KENNEDY read before the Royal Medical and Chirurgical Society a paper (see No. of this Journal for July, 1860, pp. 237—9), the object of which was to show that typhus and typhoid fevers were the result of a common poison. In a late No. (August, 1862) of the *Dublin Quarterly Journal of Medical Science*, he has published the results of his additional experience; and gives the details of forty cases illustrative of the types of fever prevailing in Dublin the last two and some former years. These cases present examples "of typhus in both young and old;—of typhus without spots;—of typhoid with none, with one or two, or with an extensive crop of them;—of typhus with the brain wonderfully free;—cases of typhoid, but more numerous, the same;—of both typhus and typhoid in which the state of the tongue and parts about were identical from sordes;—many cases of either type with the chest not engaged at all, or so slightly as not to call for treatment:—instances of both types with and without tympany;—cases of either kind entirely free from hemorrhage; a freedom remarkable when compared with former years;—and lastly, the modified types of fever which the present year has disclosed."

The conclusion, Dr. K. says, "at which, after the fullest consideration of this question, I have arrived is the same as that of two years since;.but with still stronger convictions on the point. *I believe that the two fevers known as typhus and typhoid are the result of a single poison; and that no other hypothesis can explain so well all the difficulties of the case.* I consider, further, that those who hold for a plurality of poisons, are bound to explain the facts already given in this paper. They should tell us why the symptoms of those two affections so often run the one into the other; why the same type of fever, whether typhus or typhoid, presents such marked contrasts; why typhoid may assume the characters of putrid, ataxic, or inflammatory fevers; febricula, meningitis, &c., and still be typhoid all the time; and this, be it observed, is described by those who believe in the two distinct poisons. They will also have to answer the argument taken from analogy, and tell us if scarlatina affords the most marked contrasts, why fever should not do the same; also how it has happened that symptoms which one writer considers essential to the natural history of typhoid, are ignored or made little of by another. And, in the last place, an explanation must be given of what has occurred in Dublin this year—that is the union of typhus and typhoid in the same subject. Now one and all these points may be satisfactorily explained on the idea of the existence of but one poison. I confess, however, it appears to me impossible to explain them on the theory of two. But, if we admit two, why not more; for assuredly there are other types of fever just as distinct as typhus is from typhoid. And this leads me to notice the third type

which prevailed this year in Dublin, and particularly amongst the middle ranks; I mean gastric fever. I hold that it is essential it should be distinguished from typhoid fever, with which it has the nearest connection; were it for no other reason than that its treatment is very different. Several cases of it have been already detailed; but, except to notice it as a special type of fever, I am not about to speak of it further here. It was, I believe, to this type of fever that the cases given, which might fairly be called anomalous, are chiefly to be referred."

14. *Treatment of Typhoid Type of Fever.*—Dr. H. Kennedy, of Dublin, expresses the opinion (*Dublin Quarterly Journ. Med. Science*, August, 1862) that the treatment adopted by some is not of the specific kind which this affection appears to him to require. "We know," he says, "that of late years anything of what would be called active treatment has been most materially modified, if not quite given up. Thus in Bartlett's work, which appeared in 1847, the measures recommended included the regular antiphlogistic treatment; whilst five years later Flint speaks of much milder measures being adopted. The late Dr. Todd, of London, we know, strenuously recommended the stimulant plan; which, it must be allowed, he carried as far as any discretion would justify; and in a published lecture of the present year, Dr. Warde, of the Dreadnought Hospital, London, has advocated the leaving the disease very much to itself. Now I mention these plans, not to criticise them; but to state that each, in its turn, will be found useful; and that no physician who has fever to treat on the large scale, will bind himself to one or the other. Every single instance must be treated by itself, and symptoms must be met as they rise. If this be done, I believe the typhoid type to be the most amenable of the many forms of fevers, provided it be seen in an early stage of the disease. Speaking of it as I have generally seen it, I would say it is not a fever to be left to itself; and several of the cases which have been detailed prove this; for there was no amendment till treatment was put in force: on the contrary, some of them were going from bad to worse. When then the case calls for it, and this is to be learned from the local, as well as the general symptoms, I never hesitate to have leeches applied over the right iliac region, followed by a poultice; taking care the bites do not bleed too long. A more common plan, however, is the application of a blister to the same part: nor can I doubt the great value of such means, and believe it is not as generally used as it might be. The blister may be repeated with the best results; nor should we ever forget that the local disease with which we have to contend is very apt to be slow in yielding; that a relapse may readily occur, and when this happens the disease is rendered very much more grave than it was. Our object, in truth, is to prevent ulceration; for if this once occur the chances of recovery are materially lessened. I state this because a recent writer speaks of the disease as if ulceration must necessarily take place. I believe this is an erroneous way of considering the matter; and that we can, by treatment, anticipate, and so prevent it. '*Obsta principiis*' is all important here, and a principle never to be forgotten.

"Of the internal treatment I have had no occasion to change from what was spoken of in the former paper. As an astringent I find the dilute sulphuric acid, in the proportion of one to three drachms to the eight ounce mixture, by much the best remedy. No other of the class of astringents seems to me to act at all so satisfactorily; and it can be modified, with the greatest nicety, to the demands of each particular case. I have often seen medicines, such as chalk, gallic acid, lead and opium, unavailingly used; and then from the moment this acid was given the patient began to amend. But it is not to be used without discretion; for it may check the diarrhœa too suddenly, and the chest or brain may so become engaged: hence, it is best to begin with a moderate dose, and increase if the necessity arise. The rule is that the diarrhœa is to be gradually lessened; not suddenly stopped. In mild cases I find the acid infusion of roses a very suitable medicine; and, when there is pain, from two to six drops of laudanum, in each dose of the mixture, commonly answers well. The sulphuric acid, I need scarcely add, is the favourite remedy with Huss. When there are

signs of irritation in the colon, and more especially when there is tenesmus, an anodyne enema acts like a charm.

"Dr. Warde, to whom I have before alluded, speaks of salines as being suited to the treatment of fever of the typhoid type. Such may answer in London; but with us in Dublin they would be positively injurious. Their effects on the healthy frame are quite too powerful to suppose that they would not act equally so on the frame weakened by a disease like fever; of which the best treatment now avowedly is, what may be called, conservative. To the class of salines I would add the carbonate of ammonia, which I believe to be too indiscriminately used; and which, in my own experience, does not suit the type of fever of which I am speaking. I have known a very few doses of it bring on diarrhœa; not only in this fever, but in many other diseases; and, if my memory serve me right, I have seen a similar remark made by Sir Benjamin Brodie; and would hence hold out a warning against the use of either salines or alkalies in all diseases of a lowering type.

"There is a class of cases of the typhoid fever in which, without any interference, the diarrhœa suddenly ceases; whilst the chest, or it may be the brain, gets as suddenly involved. All such I have found turn out most critical, and I have latterly been in the habit of keeping up, for some days, a discharge from a small blister, usually put on the chest. In this way I think I have seen very beneficial results follow. It seemed as if the poison were, in part at least, got rid of by the system; and all went smoothly afterwards. The point, I believe, is worth bearing in mind, and so is mentioned.

"In the last place I would notice a point which was also spoken of on a former occasion. Are stimulants, as a class, used too indiscriminately? I think they are. It seems a very general impression that if they are to be used, it matters little of what kind they are: hence, brandy, wine, and beef tea, are constantly spoken of as being given to the same patient. Now I do not deny that all may be required at the same time. But I do say that in numerous instances judgment is to be exercised; for most assuredly the effects are not the same; and when their different composition is considered this need not excite wonder. Thus, if we compare wine and beef tea, the former, contrary to what might at first be thought, may be given with much less risk than the latter; and I am sure I have seen cases where secondary inflammations—in the chest amongst other parts—have been lighted up by want of attention to the very point of which I speak. Though much more might be said on this subject, enough has been advanced for my present purpose.

"In conclusion, I would observe, that the class of mixed cases, as they may be well called, require even more than the ordinary amount of attention. The fever becomes so heavy in many of them that the abdominal symptoms are very apt to be masked, and so may readily be overlooked. In such cases, too, it may be requisite to direct our treatment at one time to the chest, or again, to the brain; and, in some of the cases given, a combined treatment had to be adopted."

15. *Epidemic of Typhus in Iceland.*—Dr. JOHN HJALTELIN gives (*Ed. Med. Journ.*, Sept. 1862) a very interesting account of a dreadful epidemic of typhus, which began in the northern part of the island of Iceland during the winter of 1857–58, and was thence apparently communicated by contagion to the eastern, western, and southern districts of the country. During the winter of 1857, about ninety cases of this fever came under Dr. H.'s observation, and it presented sometimes the character of exanthematous typhus, and sometimes of typhoid or "typhus abdominalis;" but although the sickness abated in the following summer, it again appeared in the autumn of 1858, and raged during the whole winter of 1859, and did not even cease in the summer months of that year, but continued its ravages through all the seasons of 1859 and 1860. In those two years no less than 900 cases came under Dr. H.'s treatment, out of a population of about 10,000 inhabitants, although of this number there were many patients that he had no time to register. When the fever broke out in a farm or cottage, it generally attacked one person after the other, until most of the inmates of the house were infected; and it very often happened that strangers

stopping in a house thus infected, contracted the disease. It was evident, therefore, that it was highly contagious.

In the beginning of 1860, the same fever was very often accompanied by malignant dysentery; and at this time also, when by far the greater number of the infected were suffering from typhoid fever, Asiatic cholera made its appearance, and was accompanied by rice-water evacuations and cramps, but happily, it was only sporadic, and did not spread by contagion. During the last winter, 1860–61, the typhus fever was decreasing, although it still displayed its former malignity, and was attended, especially in the eastern part of this country, by great mortality. In some parishes of this part of Iceland, one-tenth of the inhabitants fell victims to the disease, a catastrophe which seems attributable to there having been an entire deficiency of medical men, and medical aid. The same phenomenon was observed in many other parts of the country, affording a strong argument against those who are of opinion that medical aid has very small influence on the mortality of malignant fevers.

In the last winter mentioned, about 122 cases of typhus and typhoid fever came under Dr. H.'s treatment, and although the disease was becoming more and more sporadic, it still preserved the same characters of malignity and contagion as it had shown in former years. In the beginning of the spring, cases of malignant cholera seemed to gain ground, and were generally more common than the typhus itself, but the disease did not spread, and was limited to some fishermen's huts.

As to the probable causes of these malignant diseases, Dr. H. states, that in the years 1856–57, an epizootic—common sheep scab—visited Iceland, and it was determined to get rid of this epizootic by slaughtering all the infected sheep, which was done in spite of Dr. H.'s remonstrances and predictions of the evils which would follow. No less than 200,000 sheep, many of them quite sound, fell victims.

Dr. H. had foretold, he says, "that this proceeding would most likely lead to fearful consequences, especially on account of the great masses of meat heaped together in the small storehouses that are commonly attached to the Icelandic farm, the single apartment of which is used as a parlour, dining-room, and bedroom. I supposed—and experience showed that I was right—that my countrymen's uncleanliness, and their bad method of salting meat, would lead to the most dangerous consequences; and that so protracted a deprivation of sheep-milk, butter, and cheese, might not only be attended by a deficiency of healthy and nourishing diet, but also give rise to famine.

"The sheep killed amounted in number to about one-third part of those contained in the island, and were intended to supply twelve months' nourishment to about 10,000 men. So convinced was I of the injurious consequences of this foolish enterprise that I wrote to the Board of the Sanitary College at Copenhagen, predicting what would happen if the sheriffs of this country—who were its authors and executors—were not to be deterred from its prosecution. The Danish government upon this enjoined them to desist; the order, however, arrived too late, the slaughter having been already executed during the autumn of 1857, and the following winter.

"Meantime, my predictions were realized. People coming from the country where large stores of salt provisions existed in great abundance, informed me that the odour of rotten meat was in many houses insupportable; they declared that they could neither stay nor sleep in them, and a short time afterwards I heard that typhus and typhoid fever had broken out in several parishes of the north, and both these diseases were subsequently extended by contagion to the southern districts.

"During the winter the peasants came down from the highland districts to the fishing places near Reykjavik, and the surrounding districts. In many of these persons the malady already existed in its latent form. On arrival, they sickened and spread the fever in the fisher cabins, which were the more susceptible to its influence, as they had been overcrowded during the winter of 1858. From this time the disease advanced from hut to hut, until the majority of them were infected by its virulence; the most crowded huts were of course infected first and most severely; but by and by the better houses became infected also, towards

the end of the winter of 1858. The mercury sank to 4° below zero, Fahrenheit, and continued there for several weeks. It was very remarkable to see how the typhus was for a time arrested by the severe cold, but re-excited when the temperature grew milder. This fresh outbreak continued until the end of May, at which period it ceased or abated, to reappear in autumn."

16. *Disinfecting Treatment of Typhus and Typhoid Fever.*—Dr. JOHN HJALTELIN gives the following as the indications for his disinfecting treatment of typhus and typhoid fever, and which he employed with advantage in the terrible epidemic which prevailed in Iceland from 1857 to 1860. These are:—

"1st. To prevent overcrowding in the farm-huts and cabins as far as possible, where this in any way could be done.

"2d. To have the windows thrown open as often as the season would allow it, and make holes for ventilation where this could be most effectually done for purifying the air.

"3d. To destroy every offensive odour about the sick, and even the smell of the sickness itself.

"4th. To introduce cleanliness in every respect.

"5th. To clean the bowels of the patients as soon as possible in an effective and perfect manner.

"6th. To destroy instantly the odour of evacuations from the patients.

"7th. To use internally disinfecting medicines in a bold and consequent manner.

"8th. To support the strength of the patients by easily digestible but nourishing foods.

"The first indication could very seldom be fulfilled, but it was done whenever possible. The second indication was for the most part tolerably executed, especially when the people got afraid of the contagion, and therefore dared not shut their windows, but followed for the most my advice in opening them.

"The third indication was, after the lapse of some time, when the people had seen the good effect of it, boldly executed; and the remedies applied to this purpose were the aforesaid disinfecting compounds, viz., chlorine-gas, Sir William Burnett's chloride of zinc solution, iodoform, and charcoal.

"The fourth indication met with many obstacles, and could seldom, on account of bad habits or poverty, be executed as it ought to have been, or would have been, if cleanliness were a more common virtue in this country.

"The fifth indication was fulfilled by administering a full dose of calomel, sulphate of magnesia, or sulphate of soda, all in large and repeated doses, according to age and other circumstances. The calomel was generally given in a dose of ten to twenty grains every day, or every second day, until the fetid odour of the dejections was gone. As the effect of this treatment, I may mention the lessened tenderness in the right iliac region and in the whole abdomen, lowering of the pulse, diminished headache, and more clear consciousness of the mind, when from the beginning there had been stupor or coma. In some cases sulphate of magnesia was given in a dose of a half or one ounce, until I was pretty sure of the bowels being well cleaned, and all bad odour of the evacuations had disappeared.

"In order to execute the sixth indication, sulphate of iron was generally put into the water-closets before they were used; but, in some cases, chloride of lime was used for the same purpose. By these disinfecting compounds no odour of the dejections could be felt, although the patients had very large and noxious-smelling evacuations. I think that every one who knows the small and dirty Icelandic huts will agree with me that this is a quite indispensable proceeding to purify the air, where many patients are crowded together in small rooms. This method seldom failed to produce a happy effect upon the patients. The seventh indication was executed in several manners. If the patients were supposed to have strong and healthy respiratory systems, they were made to inhale iodoform or chlorine gas mixed with the air. The former remedy was most frequently used, and the good effect of it (according to my experience) is undeniable. It was in some instances given internally, dissolved in ether, and seemed

often to produce a well-marked relief, and especially it was observed to check coma and delirium. The chloride of lime was never used internally, but the patients were often made to inhale the vapour of a concentrated solution of chloride of lime, which was managed in this manner: Linen strips were dipped in the solution, and hung up to dry by the bedside, which caused a continuous chlorine gas exhalation in the room. By patients with weak and irritable lungs the iodoform was always preferred to the chlorine gas.

"The eighth indication, namely, to support the strength of the patients, was fulfilled by nourishing food and decoction of bark; and this was sometimes recurred to in the third stage of the fever, in order to prevent death from exhaustion. It seems to me that many physicians are too much afraid of using nourishing diet in typhus fever, forgetting the great loss of nitrogenous compounds which this sickness, by the large excretion of urea, produces. I have seen many typhus patients in this country, who, as soon as they were able, took very nourishing food, which would never be allowed in the hospitals of Europe, recover speedily; and, comparing this fact with the languishing and protracted recovery in the hospitals, I conclude that nourishing food in the latter stages of this fever is quite indispensable.

"As to the result of my treatment, I am obliged to make some remarks, and in so doing it is necessary to mention the ravages of the typhus fever in our country during the years 1859 and 1860. In the northern part of this island, and on the western shores, a good many patients fell victims to it; so that in some parishes the mortality was no less than 1 in 16, or even 1 in 14, of the whole population. In some parishes every tenth inhabitant died from the sickness; and in many places, where no medical aid could be obtained, the mortality of the whole population for the year 1860 was 1 in 15 or 16. At the same time the mortality for the town of Reykjavik was only 1 in 29, and for the adjacent parish 1 in 27. Being the whole time obliged to go from one hut to another, and, besides, to make many visits in the neighbouring country, it was impossible for me to calculate the number of my patients in a perfect and accurate manner. I only know this (as aforesaid), that during the years 1858–61 I have had a number of not less than 900 cases of typhus and typhoid fever under my treatment, and that out of this number I have lost no more than 30 patients from this disease. In a neighbouring parish the number of the patients was 95, and out of this number only two died. I am, therefore, inclined to believe that if my disinfecting treatment had been carried on under favourable circumstances, the result might most probably have been still more conspicuous.

"It is, I think, an acknowledged fact, that the eruptive and enteric typhus are dangerous fevers; and, although some physicians believe that the eruptive typhus is less dangerous than the enteric typhus, we have in this country, during the last epidemia, proofs of its malignity, which led to the enormous mortality of 1 in 6 of the inhabitants in some places. Almost the same fatal mortality as happened here, occurred during the last epidemia in the Westmanna Islands. The physician of that place fell at the outbreak of the epidemia a victim to the typhus, and out of 400 inhabitants 40 died afterwards. In some parishes in the east part of this island it is related that the mortality sometimes rose to 1 in 3 of the affected.

"Mortality of typhus is, as we know, very variable, according to the nature of the epidemic constitution and other circumstances. In Hooper's *Physician's Vademecum*, fifth edition, it will be seen, page 274, that the mortality of adynamic fevers in Edinburgh and Glasgow has very often been 1 in 10, and even 1 in 6 or 7, or as great as in some parishes of this island during the last epidemical typhus. From several articles in the *Lancet* I learn, moreover, that the mortality of typhus in the hospitals of London is very often found to be 1 in 10, or even 1 in 8; and, according to Dr. Trier, of Copenhagen, the mortality of typhus and typhoid fever in that city has generally been 1 in 8, or sometimes 1 in 6. In Germany and France it is well known that the mortality from malignant fevers in the hospitals is generally 1 in 9, and sometimes 1 in 7; but in Russia, namely, St. Petersburg and Moscow, it is still less favourable, being in some epidemics 1 in 5.

"It is generally accepted now-a-days, that physicians, before the determina-

tion on the adoption of a particular method of treatment, should always first inquire what would happen in this case if no remedies whatever were employed; or, in other words, if the patients were altogether left to nature, that is, to the efforts of their own constitution. Many renowned physicians will say, 'The living machine, unlike the works of human invention, has the power of repairing itself. It contains within itself its own engineer, who, for the most part, in by far the greater number of cases, requires no more than some very slight assistance of our hands,' etc. This is the fashionable talk of the most celebrated physicians in our time; but I have always thought that this principle is of as little use to medicine as it is unworthy of a science which now claims the name of an 'exact learning.' But fashion has a strange power, and thus this 'inactive treatment' is become a general rule amongst the physicians of Europe in our century. In the meantime, it seems to me that the modern medicine has by this principle involved itself in some contradictions, or why do we then cure scurvy with large doses of citric acid, inveterate syphilis with large doses of iodide of potassium, intermittent fever with bark, rheumatism by repeated doses of bicarbonate of potassa, lithic diathesis and oxaluria with large doses of carbonates and strong mineral acids? Why do we at all give remedies for poisons? And if we give remedies against mineral and vegetable poisons, why not also for organic poisons? I hope that very few physicians will now-a-days deny the origin of malignant fevers from organic poison; but, if this is accepted to be true, why should we then not try by all possible means to destroy these poisons? Pure air is, no doubt, the most common destroyer of organic matter, and it is, I think, on this account that the modern ventilation has done so much good to prevent and cure malignant fevers. We may, I hope, go still farther, and clean out the organic poison from the human body by a right use of the principles of modern chemistry; but, leaving the destruction and elimination of fever poisons from the body to nature's efforts alone, we may, I think, very often be mistaken and disappointed.

"Regarding the melancholy ravages of our epidemic typhus when it was allowed to run its own course, or whenever the patients were unaided by the medical interference, I can hardly doubt that my positive disinfecting treatment has been of some value, and I should indeed feel very happy if these few remarks could induce some of my dear colleagues to give it a fair trial."—*Ed. Med. Journ.*, Sept. 1862.

17. *Treatment of Delirium Tremens.*—The No. of the *Edinburgh Med. Journ.* for November last, contains a very interesting paper by Professor LAYCOCK on the diagnosis, prognosis, and treatment of delirium tremens. In this paper Prof. L. advocates, as he did four years since (Oct. 1858) in the same journal, the expectant and rational method of treatment. His views with regard to the medical treatment are marked, we conceive, by good sense. "Since a case of delirium tremens tends," he says, "independently of active remedies, to a favourable termination in from four to fourteen days (the cases I have treated have averaged six days' duration), the great indication of medicinal treatment is to favour this tendency in *expectation* of early recovery. It is favoured by preventing as well as by helping. The natural impulse to interfere by the aid of narcotics and stimulants, or by mechanical means of restraint, has to be checked. This is best attained by adopting a plan of treatment which occupies and gives confidence to the attendants and friends, and at the same time calms the patient. The effects of medicinal agents or drugs used to this end cannot be satisfactorily determined in many cases, because we cannot say, when calm and sleep come on, how much is due to the drug, how much to the diet and regimen, and how much to nature; so that all experience upon this point is somewhat doubtful. It is certain, however, that drugs have and do exercise an influence over the intensity of the symptoms, although they may not either cause sleep or shorten the duration of the disease. Of these, opium and its salts, tartar emetic, digitalis, chloroform, purgatives, alcoholic and other stimulants, are examples.

"*Alcoholic Stimulants.*—These are available in all asthenic forms of delirium, however caused. They have been hitherto administered in the methystic form, chiefly on the theory that the sudden withholding of the habitual stimulant is

the exciting cause of the delirium. The depression of the nervous system may be partly due to the want of the accustomed stimulus; but all experience shows that it is still more commonly due to morbid causes of a more general character, such as induce a feverish cold, a fit of indigestion, of the gout, or the like. Without such concauses, abstinence from habitual stimulants will not excite delirium tremens. The habitual drunkard distinguishes the depression which commonly succeeds to stimulation as 'the blues;' 'the horrors' is a different thing, and occurs when any indisposition induces loss of appetite, languor, disturbed sleep, and other symptoms of the class. It is the depression thus induced by this same morbific cause which constitutes the first stage or simplest form of delirium tremens. The intensity, therefore, is partly, at least, determined by the kind of indisposition or acute affection; and it is this we have to remedy. The indications, therefore, for the administration of alcoholic or habitual stimulants must be drawn from the then condition of the patient, just as in other diseases in which remedies of this class are useful. When food has not been taken for several days, and the hallucinations are of a frightful or distressing kind, and especially when the pulse is very quick and feeble, the first sound of the heart heard indistinctly, the tongue coated, œdematous, and flat, or indented at the edges, wine and brandy may be administered medicinally with advantage. Sometimes this state of prostration is due to the combined influence of drinks and opium or its salts, or to opium alone. In either case, alcoholic stimuli may be given." * * *

"*Opium and Salts of Morphia.*—The influence of these drugs is very various; in one class of cases having the most beneficial effect, in another increasing greatly the excitement and delirium. The like difference in effect is seen when given in cases of melancholia and mania, for which they have been freely prescribed. In some of these, as in some cases of delirium tremens, very large, and, under ordinary circumstances, poisonous doses have little effect. This tolerance of opium in certain forms of delirium tremens has probably led to its heroic administration in cases generally. A question has arisen, whether, in those thus treated which terminate fatally, the death is due to the drug or the disease."

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"My own conclusions on this point are, that the combination of alcoholic drinks with opium tends to render the patient more tolerant of the drug; that in some drunkards its operation is so much delayed, that when given in repeated doses, there is a cumulative effect produced; that it is never a wholly safe practice to administer it for the express purpose of procuring sleep, nor as a stimulant in more than the ordinary doses; and that it is always prudent to watch the effect of the remedy on the pupils in exciting contraction. How far various other states of the encephalon may antagonize the drug, and for how long, we never perhaps can say, but that there are such states variously induced is one of the most certain things in physic. We have it in cases of both mania and melancholia, in certain kinds of neuralgia, in traumatic tetanus; and it is believed that it may be induced by henbane, belladonna, and other drugs. And it is to be remembered that the antagonizing state may be so transient as to leave the brain exposed to the full action of the poison before it is eliminated—nay, by its action on other viscera may delay the elimination." * * *

"*Camphor.*—It is not easy to determine beforehand when opium or its salts serve only to induce greater prostration and distress; most generally, however, the patient is of a nervous habit with a florid complexion, or at least has had, and is of a neuro-vascular diathesis. In cases of this kind where the exhaustion is great and morphia inadmissible, camphor proves sometimes useful, in from two to three grains every three hours, or the carbonate of ammonia combined with camphor and henbane.

"*Mental Hypnotics* are singularly successful in those cases in which there is a morbid apprehension as to sleepless nights, and a hypochondriacal anxiety for sleep. It is often the morbid feeling alone which prevents sleep: this is proved by the circumstance, as repeatedly witnessed in my practice, that any simple remedy administered to the patient so as to impress him with the conviction that it will cause sleep, is followed by sleep; and sometimes, when convalescence is approaching, by as prolonged a sleep as if a powerful narcotic had been taken.

In one case of this kind the long sleep which followed upon a placebo excited alarm.

"*Tartar Emetic.*—This drug, like opium, has been administered in large doses in delirium tremens; the effect of which, I venture to say, can only be to excite gastric or gastro-enteric inflammation. Now, it is probable, counter-irritation of the gastro-intestinal mucous membrane is very beneficial in some cerebral affections. Perhaps calomel sometimes acts in this way in acute hydrocephalus; but in the majority of cases of delirium tremens this result is attained by a simple purgative, and care should be taken to avoid irritating the already irritated stomach. Tartar emetic, therefore, should be administered in solution, and in doses not exceeding 30 minims of the liquor of the Pharmacopœia. It is chiefly indicated in those cases in which there is some inflammatory complication, and especially pneumonia, however trifling. It is advantageous, too, at an early period in those in which the whole character of the disease is more sthenic, and the mental disorder more nearly approaches insanity or mania. In these the patient is less apprehensive and timid; often loquacious, suspicious, and inclined to be aggressive upon slight provocation; he has notional delusions more predominantly than hallucinations of the senses; his nights are disturbed, but not wholly sleepless; nor has he tremors of importance. His appetite comparatively with the asthenic form is little impaired; his tongue but little coated, and when projected rather pointed and firm, than flat, flabby, and tremulous. His skin, too, is rather hot, or at least natural, than cool and moist; and the pulse is less round, undulating, and quick. Cases of this kind are intolerant of stimulants and opium even in small doses, these being apt to change a 'cantankerous' kind of delirium into a raving or destructive sort; whereas 20 to 30 minims of tartar emetic liquor, given every three or four hours, calm, or at least do not aggravate. When, however, there are symptoms of depression, especially in a young person, and the history is that of causes of exhaustion, laudanum in 5 to 15 minim doses is a useful stimulant, in combination with 15 to 20 minims of the liquor. This has long been found useful in ordinary maniacal delirium thus arising.

"*Emetics, Purgatives, and Stomachics.*—Methods of treatment by purgatives, quinine, and tonics have been recommended. The patient before coming under treatment has usually tried remedies of this class, especially *bitter* drugs, either as bitter tinctures, 'the bitters' of the dram-shop, or in bitter beers. The effect of these is to modify the symptoms, and especially to induce muscular twitchings, tremors, and even slight convulsive attacks. Very often in such there has been a total loss of appetite, and no food has been taken for several days. In some, food is vomited, in others, if retained, it causes pain, because of the state of the mucous membrane of the stomach. This is often, in fact, congested and inflamed. Hence the dietetic and medicinal treatment of gastritis is indicated; constipation and hepatic congestion are not uncommon complications, and indicate a suitable aperient. Podophyllin, calomel, colocynth, and henbane, castor oil, salts, and senna, and Gregory's powder, were the ordinary remedies of this kind used in the infirmary. Of the new drug as a bilious purgative I can speak favourably. Podophyllin was prescribed in several cases in combination with cannabis indica or henbane, with good effect. The following formulæ were used: ℞. Podophylli, gr. ij; pulv. cinnamomi co., extract hyoscyami, āā ℈; mucil., *q. s.* The mass to be made into four pills, of which one to be taken every six hours until the bowels were moved. In another formula, gr. viij of powdered ginger, and of extract of cannabis indica were combined with gr. iij of podophyllin, and made into six pills. The purgatives, of whatever kind, were always given at the commencement of the treatment and not afterwards. Emetics were never tried, and were never indicated except in cases of drunkenness. Stomachics were prescribed in a few cases at the termination, when convalescence was established, but were rarely needed.

"*Digitalis and Chloroform.*—There is evidence of the calming effect of digitalis, but it is of the vaguest kind. There is no indication of the class of cases in which it may be safely prescribed, nor are we clearly informed whether in the cases reported there was not renal or cardiac disease, or the complication of drunkenness or of narcotization. I have seen it tried in one case, in which, in

consultation with a medical friend, it was resolved to try a half ounce dose of the tincture. The patient had had a drinking bout, and suddenly became aggressive and destructive, tearing, pulling down, and burning, and striking and throwing things at the attendants. There was no loquacity: the patient rarely spoke, but sat in bed, rolling up the bedclothes, tearing off his clothing, and throwing food and drink in the faces of those who offered it. This he did with his dose of tincture of digitalis, after drinking one-half of it. The case was one in which the expectant treatment was thereupon tried with entire success—reason being restored and convalescence established within the week. Chloroform has been administered in very violent cases with advantage: when exhaustion is likely to come on from the constant raving and struggles of the patient, it may save life by saving strength. Such, however, are rare, and are more frequently met with as the result of heroic treatment than in the ordinary course of the disease.

"There were two or three cases of puerperal mania (so called) admitted into the Infirmary and Milnholm Asylum during the summer, and were treated on the same principles as the cases of delirium tremens. One of these brought to the infirmary had fallen into a raving delirium after taking morphia. They were, in truth, acute cerebral affections, of which parturition, or the puerperal state, was the exciting cause, and recovered within a short period. How far albuminuria is a cause or an effect of the morbid state of the encephalon, in this class of cases, has yet to be determined, although it is commonly assumed to be the cause. In none of the cases I have treated was there any important renal complication, nor was albuminuria detected, although the urine was carefully examined. Renal disease, especially albuminuria, is amongst the rarer complications of insanity."

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18. *Anæsthesia caused by Diseases of the Lungs.*—M. Bouchut long ago remarked the fact, that the approach of asphyxia in the latter stages of croup brought with it a condition of lowered, and finally of extinguished sensibility. He now produces examples of other diseases, to show that the law is a general one, that asphyxia is always accompanied, *pari passu*, by anæsthesia; and this anæsthesia is quite independent of any diminution of consciousness. The most interesting of his cases is that of a young man, a student, who was attacked with a most profuse and suffocating hæmoptysis. During several hours he was in a condition of extreme asphyxia, and although his intellect remained clear, he had complete anæsthesia, and curiously enough, even an erection of the penis and discharge of semen such as frequently occurs in persons who are hanged. The other examples cited of anæsthesia occurring in the course of respiratory affections, are cases of croup, capillary bronchitis, &c.—*London Med. Rev.*, Oct. 1862, from *Gazette des Hôpitaux.*

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19. *Therapeutics of Consumption.*—Dr. Cotton, in a paper read before the Medical Society of London (Oct. 20, 1862) presented the results of some experiments which he has been carrying on for the last five years at the Hospital for Consumption, Brompton, upon the action of certain medicinal substances upon phthisis. He had exhibited the following substances, each in twenty-five cases of simple uncomplicated consumption—viz., phosphorus, liquor potassæ, hydrochloric acid, iodide of iron, iodide of potassium, chloride of sodium, vinum ferri, glycerine, sesquichloride of iron, chlorate of potash, quinine, and phosphoric acid. The results were numerically stated upon a table which was exhibited. The phosphorus was administered in doses of about one twenty-fifth of a grain two or three times a day; in a few cases it seemed to do good, but more generally its effect was unsatisfactory. Liquor potassæ was productive of very little good, and presented a marked contrast to the dilute hydrochloric acid, which evidently contributed in many instances to marked improvement in the patients; only 12 per cent. of those who had taken the potash having been benefited, whilst 68 per cent. of those who had taken the hydrochloric acid received more or less good. Amongst the latter were some very decided cases. Iodide of potassium contributed but few cases of improvement, its effects being generally of a negative character. Iodide of iron, however, made a very respectable addi-

tion to the list of improved cases. In many instances chloride of sodium acted favourably as a tonic, both the appetite and general power of the patients appearing to increase under its use. Steel wine was productive of very good results, especially in children and young persons. The author appeared to place great faith in its use, particularly when given with, or immediately after, meals. Glycerine failed very generally, and its effects could bear no comparison with cod-liver oil, both these substances having carefully weighed one with the other. Of all remedies the sesquichloride of iron seemed the most effective, a considerable number of patients (66 per cent.) having derived more or less advantage from its use. Dr. Cotton stated that both in his hospital and private practice he had long regarded this as one of the most useful agents in the treatment of the ordinary run of consumptive patients. Chlorate of potash proved useful in many of the very cachectic cases; but it was far from a "specific"—a title given to it by more than one medical practitioner. Quinine was less effective than many other tonics, although it did good in a small proportion of cases. Steel and quinine, however, were spoken of by the author in very laudatory terms. Phosphoric acid acted as a tonic in a certain number of cases, but was inferior to other mineral acids, especially the hydrochloric. The author carefully explained that the table he had exhibited showed rather the comparative than the absolute value of the remedies he had given, since it was impossible to separate from its share in the results the combined action of hope, rest, good diet, and general hygiene, which at the Consumption Hospital form an important part of the treatment.

The following are amongst the conclusions which Dr. Cotton wished to draw from the facts he had detailed:—

1st. That since, during the administration of each one of the agents he had experimented upon, several cases were observed to run through the various phases of the disease, some to a fatal termination, it is obvious that, whatever the amount of benefit which in some cases followed their use, no one of such agents deserves the title of "specific."

2d. It may fairly be concluded that the good effected by any of these agents was due to their respective tonic and upholding influence upon the general system.

3d. In the majority of phthisical cases, steel—especially the sesquichloride of iron—and the mineral acids appear to be the most effective; but tonics generally are productive of more or less improvement.

4th. Since, however, even steel and mineral acids, as well as other useful tonics, are undoubtedly inert in a certain proportion of cases, it is not improbable that there are varieties or modifications of phthisis, each of which may require a particular treatment. As there are special varieties of many other diseases requiring special modes of treatment, and yielding to none other, it is possibly the same with consumption.

Dr. Cotton observed, in conclusion, that we are too apt to consider and to treat phthisis as a separate and always similar disease, forgetting the almost endless varieties or modifications it presents; and stated his conviction that at no distant period of time consumption, like many other diseases, will be shown to present definite and special forms, each of which requires definite and special management.—*Lancet*, Oct. 25, 1862.

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20. *Pleuritic Effusions, viewed in Relation to Thoracentesis.*—Dr. HENLEY THORP has published (*Dublin Quarterly Journ. Med. Sc.*, Aug. 1862) some interesting observations on this subject, illustrated by two cases in which thoracentesis was successfully performed.

The objects of Dr. T.'s observations are—1st. To sketch briefly the particular morbid states that may call for the performance of thoracentesis; and 2d. To indicate what he conceives to be the just pathological principle which should guide us in our mode of performing the operation.

"The most extraordinary fact connected with the history of paracentesis thoracis is," Dr. T. observes, "the variable amount of success that has hitherto attended it in different hands—the most discordant results have been obtained by men of equal experience, and possessing similar advantages for observation—

nevertheless, although individual opinion has differed so widely respecting the merits of the operation, it is now demonstrated that its general result is most encouraging, whether considered as a curative or merely palliative measure. The very important contributions of Bennett, Hughes,[1] Hamilton Roe,[2] and Phillips,[3] [Dr. T. should have added—and of Dr. Bowditch], place the statistics of the operation in a very favourable position, and have contributed in a great measure to remove the erroneous views, respecting its danger, rather generally entertained by the profession. Nevertheless, much diversity of opinion still exists as to when and in what cases thoracentesis ought to be performed.

"I think the following enumeration will be found to embrace nearly all the conditions under which the proceeding is likely to be contemplated: Cases of hyperacute pleurisy, attended with rapid effusion and eccentric pressure, so formidable as to threaten suffocation; cases of pleurisy in which, after the ordinary treatment has failed to remove the effusion, the latter remains either stationary or increases; in empyema proper, or pyothorax, when the strength of the patient is unable to bear up against the suppurative crisis, or asphyxia is imminent; in cases of chronic pleurisy, or latent effusions, occurring, for the most part, in young subjects, after the failure of ordinary measures; unabsorbed effusions incident to Bright's disease, attended with dangerous thoracic distress; pleural collections, persisting as sequelæ of the exanthemata, or continued fever; passive dropsy of the pleura, attended with symptoms of impending suffocation, complicating organic disease of the heart and lungs; certain cases of pyo-pneumothorax produced by the sudden bursting of vomicæ into the pleural sac; some examples of the same condition, the consequence of sloughing of the lung and pleura; traumatic lesions, where the presence of blood, air, pus, or other effusions is productive of hazardous pressure irremediable by other means.

"From a glance at the foregoing category it must appear obvious that no approach to a uniformity of symptoms or physical signs can be arrived at as an indication for the operation; the whole series, however, as respects the remedy in question, may be arranged into three groups:—

"1. Cases in which thoracentesis, in the absence of symptoms of immediate urgency, may be employed as a curative measure.

"2. Cases in which the operation can only be considered as a palliative remedy.

"3. Cases in which it may be had recourse to as a *dernier ressort*.

"I apprehend that the greater number of the conditions above specified are such as would be considered, by the majority of practitioners, beyond all hope of cure, or even relief, from any operative measure, still I cannot avoid entertaining a belief that the value of thoracentesis, rendered more perfect and safe as the mode of performing it comes to rest upon sounder principles than heretofore, will by-and-by be generally recognized by the profession; and that the operation will be practised earlier and oftener, and on the whole, perhaps, with fewer misgivings as to the ultimate issue than paracentesis abdominis, which is, with very few exceptions, only had recourse to as a palliative remedy."

In connection with the various plans proposed for tapping the chest, Dr. T. considers that "a point of paramount importance has failed to receive from surgeons the consideration it deserves, namely, the physical characters of the fluid to be evacuated. Each practitioner recommends a particular mode of operating, without any reference whatever to the quality of the pleural contents. Would, I may ask, collections in other parts of the body of serous, sero-sanguineous, sero-albuminous, and purulent fluids be treated alike, and by the same surgical procedure? Do not surgeons every day practically recognize the difference between chronic, cold, acute, symptomatic, and other abscesses and collections, and act accordingly? How comes it that pleural effusions, of whatever character, should be placed in the anomaly of having only one plan of proceeding applicable to them? Surely here must be an oversight. Until lately surgeons had an unfounded dread of opening even acute purulent collections in certain

[1] Guy's Hospital Reports, vol. ii., new series. 1844.
[2] Medico-Chirurgical Transactions, vol. xxvii. p. 198. 1844.
[3] Medico-Chirurgical Transactions, vol. xxvii.

localities—for example, in connection with the larger joints. This prejudice, however, is fast dying away; and if the practice first insisted upon by Mr. Gay were oftener and more promptly executed we should have, perhaps, fewer cases of 'resection,' an innovation which has of late years become so very fashionable.

"Let us endeavour, then, to apply the common principles of pathology to the treatment of hydrothorax and empyema, and seek to apprehend correctly the ordinary operations of nature in the removal of these diseases. How does the spontaneous cure of pyothorax take place? Here as elsewhere the purulent matter tends to the surface, and is either discharged into the bronchi or penetrates the chest-wall through an intercostal space; atmospheric air has access to the sac of the abscess; gradually the suppurative action lessens as the cavity contracts; and, if the strength of the patient be equal to the effort, a cure is effected. How differently does nature proceed in her task of eliminating serous, sero-albuminous, and non-purulent collections in the same locality. These latter are never discharged *as such* in the manner just described; they are either directly absorbed, or of necessity undergo the *purulent transformation* preparatory to their opening into the lungs, or externally. May not these considerations be suggestive as to the most eligible mode of performing thoracentesis in different instances, and moreover throw some light upon the long-debated question of the influence of atmospheric air when admitted into the pleural cavity.

"It is almost superfluous to remark, that some operators suppose this gaseous body to possess a most pernicious influence, whilst others believe it to be perfectly innocuous. That atmospheric air itself exerts no irritating influence on the tissues of the body is rendered pretty evident by the phenomena of general emphysema, as also of simple pneumothorax, whether traumatic or occurring as a consequence of rupture of a dilated air vesicle; although the cellular tissue of the body may be inflated so as to resemble a 'stuffed skin,' and the pleura distended almost to bursting, no erethism or reactive inflammation is the consequence of the lesion. But that atmospheric air, on some occasions, does exert a deleterious effect is unquestionable; but it so acts, not by reason of its stimulating properties, but simply because it supplies one of the conditions under which putrefaction of purulent and other fluids is likely to occur. Not that its presence is invariably followed by the chemical change in question. Laennec gives the case of a patient affected with broncho-pleural fistula, who for six years exhibited the signs of hydro-pneumothorax without either local or constitutional distress. Louis, and various other physicians, have witnessed similar instances. In truth the precise conditions under which putrefactive changes are generated in the pleura have yet to be determined; insomuch so that we are forced to admit, in addition to the acknowledged influence of heat and air, the presence of some unknown agent or state which disposes the fluid contents to undergo catalytic changes—or how explain the cause of the latter not taking place in the cases just referred to? Enough, however, is known to warrant the exercise of great caution in performing paracentesis so as to prevent the ingress of atmospheric air in certain pleuritic effusions of the non-suppurative class; whereas purulent collections in the cavity of the chest should form, in my opinion, no exception to the ordinary manner of dealing with similar diseases elsewhere.

"In short, I would apply to pyothorax, or pure empyema, the surgical principle, to which there are few exceptions in acute or subacute suppurations; that of discharging the abscess by a free opening. Here, however, it is necessary to inquire where the perforation should be made when the case admits of a point of election? and we may not act unwisely by interrogating the *vis medicatrix* on this head. When spontaneous openings occur, are they not generally found anteriorly and high up? Nature then indicates these positions as being the most eligible by her own operations. Nor is the object of her method obscure or unintelligible. By causing the liquid contents to proceed from below upwards she guards against the sudden evacuation of a cavity (and consequent entrance and *imprisonment* of atmospheric air in proportionate volume) the walls of which can only approximate by slow degrees; thus the suppurating sac is emptied gradually by its own contraction; and the air, which can only enter in small quantity, has *free egress*, being *always uppermost*, and in close proximity with

the discharging orifice. We should therefore, in conformity with these principles, not open the chest in a depending position; for, if, unfortunately, afterwards, putrefactive changes take place, the septic gases floating above the other contents *have no exit*, are absorbed by the lining membrane of the cavity, excite inflammation of the latter, contaminate the blood, and produce typhoid symptoms. To prevent, then, putrid absorption, and its concomitant evils, let the empyema be opened above—that is to say (when the case admits of our doing so), between the fourth and fifth ribs, anteriorly, and provide, if necessary, for the constant drainage of the abscess by the introduction of a Chassaignac's tube.[1]

"In cases, however, of hydrothorax, or sero-albuminous, sero-sanguineous, and passive collections in the pleural sac, our operative proceedings should be guided by very different principles. In pyothorax a pyogenic membrane is already formed, and matter is making its way to the surface; by evacuating the collection we only complete an operation already commenced. But the other class of effusions referred to are very differently circumstanced; they are not included in an adventitious sac, or newly organized membrane, but lie in contact with the serous surface in a healthy condition, or only slightly altered in anatomical structure and vital endowments; the fluid evinces no tendency to reach the surface; if it disappear it is directly absorbed from the serous cavity, and is never evacuated externally without having previously undergone more or less of purulent metamorphosis. Therefore we should endeavour, in dealing with these immature collections, to avoid all causes of irritation, and to prevent, by all means in our power, the higher or suppurative grade of action not yet attained under existing conditions; in short, we should make the practice of art approach as closely as possible to nature's own operations, and not proceed in untimely advance of them. Accordingly the fluid ought, only in the first instance, to be partially withdrawn; the remainder may be absorbed into the system; if not, the tapping may be repeated. Valvular perforation of the integuments and the employment of a vulcanized India rubber bag and stopcock, or the ingenious trocar and canula invented by Mr. Charles R. Thompson, will effectually prevent the entrance of atmospheric air.[2]

"By proceeding in this manner we do not overstrain the vital processes of the economy in their progress towards the restoration of health, but only disencumber them of impediments that check their free action, and, with full confidence in her resources, leave Nature to complete the cure by the continuance of her own efforts.

"We first endeavour to comprehend the purposes and *modus operandi* of the *vis medicatrix*, and then follow faithfully in her path, without seeking, by premature interference, to reverse the natural order of pathological events, or force upon her contingencies for which she is as yet unprepared."

21. *On Tobacco as a Cause of Angina Pectoris.*—Among the bad effects produced by the excessive use of tobacco may be mentioned vertigo, chronic sore throat, dyspepsia, and cough accompanied with emaciation simulating phthisis. To these morbid conditions we must now, according to Dr. Beau, add angina pectoris. This opinion is founded upon eight observations contained in an interesting paper lately laid before the Academy of Sciences. These facts have an additional value because they agree perfectly with the experiments of

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[1] It may be necessary, in certain cases, to make a counter opening inferiorly, and draw the tube completely across the cavity. This plan of "drainage" has been adopted in two instances, by Dr. Goodfellow, with signal success. He reports them in the 42d volume of the Medico-Chirurgical Transactions. The practice, also, of iodine injections, after the cavity has been reduced to the condition of a fistula, is well worthy of trial.

[2] As suppurative action is not anticipated in the mode of operating referred to in the text, the point of election need not, as in pyothorax, deviate from that generally selected—namely, between the fifth and sixth or sixth and seventh ribs, and midway between the sternum and spine. When any doubt exists as to the nature of the fluid, the introduction of Dr. Babington's explorator will be found preferable to the grooved needle in ordinary use.

M. Claude Bernard upon nicotine, and are illustrations of the doctrine which considers angina pectoris as being an affection of the muscular substance of the heart, with irradiations in the thorax, the neck, and the upper extremities.

M. Bernard has proved that nicotine, a poisonous alkaloid as powerful as prussic acid, though acting in a different manner, produces its principal effects upon the nerves, upon the muscles, but especially upon the vascular system. In a moderately strong dose, this substance produces in the muscles convulsive movements which may terminate in a permanently tetanic condition; whilst, if the dose is small, the first effects are produced upon the heart and lungs, giving rise to acceleration of the respiration, and increased energy of the cardiac pulsations. A clear proof that the nerves are the organs of transmission of this complicated action is, that after the division of the pneumogastric none of these phenomena are manifested. It is important to add, that the action upon the muscular system is produced exclusively when the nicotine is pure and in sufficient quantity; whilst, if it is diluted or mixed, it acts specially upon the respiratory apparatus and the heart.

Of course, Dr. Beau does not suppose that the abuse of tobacco is the only cause of angina. On the contrary, he says, that the causes of this affection are numerous, and he has only pointed out an additional cause which had not been previously attended to. He also adds that for the production of angina among smokers a series of conditions is required, which is only rarely met with. These conditions are: 1st, the excessive use of tobacco; 2d, a special susceptibility of the individual; 3d. debilitating influences, such as anxiety, fatigue, an enfeebled condition of the disgestive organs, etc., which, preventing the organism from getting rid of the tobacco absorbed, allow it to accumulate to such a degree, that nicotine is present in sufficient quantity to produce its poisonous influence upon the heart.

The following are the observations appealed to by Dr. Beau.

1st. A small proprietor, sixty years of age, passed the greater part of his time in smoking. For about a month he had often experienced, during the night, attacks of palpitation, with oppression and pain radiating to his shoulders. He ceased smoking; the nocturnal attacks disappeared completely at the same time that his digestive functions improved. At the end of three months he recommenced to smoke, and the attacks returned. He then definitively abandoned the use of tobacco, and the attacks of angina ceased, never to return.

2d. A medical practitioner, fifty years of age, feeble and dyspeptic, although appearing healthy and robust, smoked cigarettes as much as his occupations would permit. During some time he suffered from palpitation with severe pain and constriction of the chest, which came on indifferently during the day or night. He gave up tobacco, and the attacks disappeared. One day, he was in the company of smokers, and although he did not himself smoke, he could not help breathing an atmosphere impregnated with tobacco. The following night he had an attack.

3d. A medical practitioner in the country, thirty-five years of age, was in the constant habit of smoking cigarettes while going about to pay visits. For some time he had eaten very little, and without appetite. One morning, having eaten nothing, and while smoking, he was suddenly seized with severe pain in the region of the heart, with a sense of constriction in the upper part of the chest. He could neither walk nor speak, the pulse was imperceptible, the hands cold. The attack lasted half an hour. The patient came to Paris and consulted Dr. Beau, by whose advice he gave up the use of tobacco. He returned home, promising to write to Dr. Beau if he had another attack. Nothing has since been heard of him.

4th. A young Spaniard, thirty years of age, was constantly smoking cigarettes. His appetite entirely failed, and digestion was difficult. One evening, while smoking, he was suddenly seized with a violent pain in the chest, as if he had been squeezed in a vice; his pulse was imperceptible. The attack lasted ten minutes. Much alarmed, he consented to smoke a great deal less, and there has been no return of the symptoms of angina.

5th. A physician who has renounced tobacco on account of the gastric de-

rangement which he suffered from, experienced at the time when he was a smoker nocturnal pains coming on in paroxysms, and characterized by a constriction of the thorax with palpitations, and neuralgic pains shooting into the neck. He is now completely free from these seizures.

6th. A merchant, who for fifteen or twenty years had suffered from dyspepsia, occasioned by the immoderate use of tobacco, has suffered for about two months from nocturnal attacks, characterized by agonizing pain in the region of the heart, with palpitations, and painful radiations extending to both shoulders; the appearance of the face is altered, the pulse is small and intermittent. In spite of the existence of these symptoms, this person smokes more than ever.

7th. An old man of seventy-five, fresh and vigorous, smoked a great deal in order to distract his mind from various sources of annoyance, although he had had several slight suffocative paroxysms. On a Saturday, he had an attak of angina, which lasted for half an hour; next day, the attack recurred; on Monday morning, he was found dead in bed.

8th. A foreign diplomatist who smoked a great deal, and who was in a feeble condition although he appeared robust, was seized one evening in returning home with an attack of angina; his pulse was small, his hands cold, his appearance choleraic. He fell asleep at eleven o'clock, and awoke next morning at his usual hour. He was able to go through all his ordinary duties, and at five o'clock in the afternoon was seated smoking in his arm-chair, when he suddenly expired. On post-mortem examination the only lesion found was a fatty condition of the heart.—*Ed. Med. Journ.* Aug., 1862, from *Journ. de Méd. et de Chirurg. pract.*, July, 1862.

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22. *Rheumatic Pericarditis and Endocarditis.*—Dr. Joseph Bell, Clinical Lecturer, Glasgow Royal Infirmary, has published (*Glasgow Medical Journ.*, April and July, 1862) some interesting practical remarks on the diagnosis and treatment of rheumatic pericarditis and endocarditis.

From the facts and reasonings adduced in that paper he makes the following conclusions:—

1st. That when the physical symptoms either of pericarditis or endocarditis become manifested in a case of rheumatic fever, we are entitled to infer that these diseases exist, irrespective of the absence of the general or constitutional symptoms which usually attend the idiopathic forms of these diseases.

2d. That we are justified in considering that the effects are capable of being removed, and are therefore amenable to treatment.

3d. That those remedies which are calculated to remove congestion and promote absorption, form the proper therapeutic agents; and that of these bleeding, mercury, and iodide of potassium, are among the most powerful and useful.

4th. That when the action of the heart becomes enfeebled in consequence of effusion into the pericardium, the free use of stimulants becomes absolutely necessary.

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23. *The Physiology and Pathology of the Supra-renal Capsules.*—The following are the conclusions arrived at by Dr. Harley in his prize essay on this subject: 1. The supra-renal capsules are not fœtal organs, but perform their functions up to the latest periods of life. 2. The supra-renal capsules are not absolutely essential to life. When removed artificially or destroyed by disease, their function is vicariously performed by the other "ductless glands," more especially by the thymus. 3. Young animals support the removal of the supra-renal capsules better than old ones (probably on account of the greater activity of the thymus in early life). 4. When only one capsule is extirpated, the other performs the double function. 5. A wounded capsule heals readily. 6. The supra-renal capsules are not marked by any great sensibility. 7. The removal of the right is more frequently attended with fatal results than removal of the left supra-renal capsule. 8. The lower animals are liable to disease of the supra-renal capsules. 9. When death follows upon the extirpation of the supra-renal capsules, in the majority of cases it is in consequence of the injury done to the solar plexus. 10. The supra-renal capsules are richly supplied by bloodvessels as well as by nerves. 11. Their function is apparently intimately connected with the formation of the red blood corpuscles.

The author further shows, from a large collection of facts, that—

1st. Supra-renal capsular disease is two times and a half more frequent in males than in females.

2d. That it occurs with equal frequency above and below the age of thirty-five years.

3d. That both capsules are (four times) more liable to be affected than only one.

4th. That the right capsule is much more liable (three times) to become diseased than the left.

5th. In diseased supra-renal capsules—

40 per cent. are affected with tubercle.
20 " " " cancer.
12 " " " fatty deposit.
12 " " " calcareous deposit.

6th. Males are more liable to be affected with bronzed skin (either with or without supra-renal capsular disease) than females, the proportion being as 3 to 1.—*Lond. Med. Rev.*, Oct. 1862.

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24. *Morbus Addisonii.*—Dr. WILKS exhibited to the London Pathological Society the supra-renal capsule from a patient who had died of morbus Addisonii. The specimen had been sent to Dr. W. by Mr. Truman, of the Nottingham Dispensary, the patient having been under the care of Mr. Marshall Hall Higginbottom. When first seen he was 26 years of age, complained of excessive weakness and want of energy, and there was a slight yellowish tinge on his countenance. He gradually lost flesh and strength until he became confined to his bed; he then underwent a thorough examination, and no disease could be found in his body. The skin gradually darkened, and the only thing he ever complained of was an aching, dull pain in the loins. The weakness increased, and towards the close there was vomiting. On post-mortem examination, the skin was observed to be universally discoloured, of a yellowish-brown hue, and more markedly so on the abdomen; but there were no distinct patches of melasma. All the organs were healthy with the exception of the supra-renal capsules; these were twice the natural size, and, on section, seemed to be densely infiltrated with masses of yellow tubercle.—*Med. Times and Gaz.*, Oct. 25, 1862.

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25. *Bronzed Skin Successfully Treated.*—THOS. TAYLOR, Esq., of Cricklade, relates (*British Medical Journal*, March 29, 1862) the following case: "On the 27th of June, 1861, I was called upon to visit Isaac Matthews, a carpenter by trade, stoutly made, of sanguine temperament, and about 36 years of age. I found he had been unwell for some time, and had been obliged to leave his work the last fortnight, simply from weakness. He was unable to walk across the room without assistance; he was in no pain, but felt an uneasiness about the loins; his appetite was not good; the bowels were regular, and the secretions from the bowels and kidneys healthy. The skin of the face and hands was highly bronzed, and had become so about the time he left his work: he said his friends had remarked of what a curious colour he was. He was advised to keep perfectly quiet, and do nothing whatever to produce fatigue, by attempting to walk or otherwise; to take sugar in large quantities with everything he drank; and to take five grains of iodide of potassium three times a day, in water.

"July 1st. He was much the same. He did not find the medicine to disagree in any way, and was ordered to continue the same.

"July 5th. He felt better before he was up this morning, and thought he should be able to walk; but on getting up felt as weak as ever. He was ordered to continue the iodide of potassium three times a day in four ounces of compound decoction of sarsaparilla.

"July 12th. He was rather stronger, and walked rather better; the complexion was rather improved. He continued to mend under this treatment until the 22d, when he had a severe rigor, which returned the next and following day, succeeded by fever, which reduced his strength.

"On the 24th he had five grains of disulphate of quina, twice a day, with croton oil liniment to the loins.

"On the 7th of August his febrile state had left him, but was succeeded by a bronchial cough which was relieved in a few days; so that on the 9th he began taking the syrup of iodide of iron in half-drachm doses three times a day, continuing to take sugar in large quantities. Under this treatment he went on improving daily; his complexion became of its natural colour; his strength increased, so that he was enabled to walk a mile with the assistance of a walking stick, by the 19th; and by the end of the month he walked to Cricklade, a distance of nearly five miles.

"On the 9th of September he again walked to Cricklade, and appeared quite to have recovered his health and strength, and the next day resumed his work.

"I heard nothing of him again until the 5th of February last, when I was requested to visit him, as it was thought he had a return of his complaint. On seeing him, however, I was happy to find that he was suffering from an attack of rheumatism, having got wet away from home three times the week before, and being unable to change his clothes. This yielded very readily to treatment in a few days, when he resumed his work, and has continued well to the present time."

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26. *Diabetes Mellitus ending in Phthisis.*—Dr. Willett exhibited to the county and city of Cork Med. and Surg. Soc. (April 9, 1862), the kidneys and lungs of a patient, and related the history of the case:—

"The following case, which Dr. Townsend has kindly allowed me to bring under your notice, is a case of diabetes mellitus ending in phthisis, as is commonly the case with this incurable disease:—

"Michael Murphy, aged 24 years, was admitted into the Workhouse Hospital on January 21, 1860. At that time he was passing about three pints of saccharine urine per diem, with a specific gravity of 1025, to 1030. During twelve months from this time, he passed from 8 to 12 pints of the same urine per diem, the mean specific gravity ranging from 1035 to 1040. He was placed under the usual treatment for this disease, viz., brown bread and oleum jecoris aselli, and during its continuance regained health and strength in some measure; but, as soon as discontinued, viz., the brown bread, the sugar again appeared in the urine, and, after a severe struggle with himself, the poor fellow gave up the brown bread from intense disgust, and was allowed his usual meals. The disease from this time, August 20, 1861, gradually decreased, the sugar daily diminishing, as if the disease had exhausted itself. But now as incurable a one set in, viz., phthisis, with its evident signs of night perspirations, cough, hectic, &c. This has gradually increased up to the present time. About two months ago, he coughed up purulent matter, streaked with blood, in large quantities, but with very little fetor attending it. He then became excessively weak and anemic, suffered greatly from dyspnœa, so that, during the last month of his life, he was supported by pillows at his back, night and day; the congested state of one lung, the right, and the emphysematous condition of the left, fully explain this, and he gradually sank till April 17, 1862, eased his sufferings.

"*Post-mortem appearances.*—The body excessively emaciated, not a trace of adipose tissue being visible under the skin, and the muscles of a bluish colour, their normal red colour being entirely lost. The lungs extensively disorganized, that on the right side completely bound down to the pleura and ribs, by very strong adhesions, which, at the apex, I could not separate by my fingers, but was obliged to cut, as you see by specimen; it is quite solid, as also is the entire of this lung. Either from tubercle, or its irritative effect, on cutting it open an immense amount of pus escaped, which I traced to a large vomica or abscess at the apex, and I also found a similar one in the middle of the same lung. I also beg you to observe the intense state of suppuration it is in, nearly approaching to the third stage of pneumonia, by Laennec called gray hepatization; or gray softening, by Andral, having both within and externally a yellowish or grayish colour, and when cut, exuding a yellow, opaque, purulent fluid, turgid somewhat with blood; that on the left side emphysematous. If you observe at the borders, on squeezing it, you will perceive the course of several small bloodvessels, not yet

obliterated by the enlarged air-cells, showing that the emphysema was in this case recent. The heart was small, from the reason of the little amount of blood to drive through the body for its nutrition, and also of a pale colour. Liver normal, but rather enlarged. Stomach normal on the outside; on being cut open, full of thick gastric juice, very acid. Kidneys, as here seen, not much enlarged, and only in a very hyperæmic state. Structure tolerably distinct, and showing how very evanescent are the traces of this formidable disease.

"In regarding the prognosis of this disease, I think that we can never look for a successful cure, as, should the saccharine state of the urine cease, or the diabetes be cured, the general tendency is, as asserted by several authors, to pass either into phthisis or morbus Brightii. The tendency to phthisis we can easily imagine, in consequence of the tissues of the lungs being so poorly nourished, and its tendency thus to degenerate into tubercle, and this particularly so should the patient show any tendency to the strumous diathesis; its leading to subsequent atrophy of the kidneys also we may assume, in consequence of their hyperæmic state, which is the first stage of Bright's disease, in consequence of their over-increased function, this hyperæmic state soon leading to obstruction of the renal tubuli by fibrin, the pressure of this on the small capillaries tending to exudation of the albuminous portion of the blood as well as the increased action of the epithelial cells in the tubuli, which, with the pressure of the enlarged capillaries on their outside and loss of cells by desquamation, and entirely filling up the secreting portion, soon passes into fatty degeneration, or the small, contracted, or atrophied kidney. I think it is also very difficult to state whether the suppurative condition, or abscesses in the lungs in this case, arises from tubercle or chronic pneumonia, as, on feeling very carefully over both lungs, I could not trace a single hard substance between my fingers. We rarely see it so entirely consolidated with tubercle excepting in cases of tuberculous infiltration. But, if we argue that such is the case, how do we account for the entire mass of tubercles suppurating *en masse*, at the same time as to the tendency of tubercle to the upper part and pneumonia to the lower lobes, as well as to the arguments deduced for the preferable localities of each on the right or left sides. I find the best authors differing, and, on that account, deduce that we may consider the question as yet *sub judice*. I find that, after searching several books, it agrees with a form of pneumonia called chronic. Under this head I find that abscesses are frequently found; also, in another form of the same, the lung is found compact, and heavy, pitting little or none on pressure, not crepitant, tearing with difficulty, sometimes almost cartilaginous; when cut, exuding a purulent or muco-purulent fluid; the colour dull red, or yellowish-brown or grayish. When distinct lobules are affected, the lung has an irregular, knotty feel; its volume is diminished sometimes. Abscesses exist within the hardened structure, and, in some instances gangrene was observed by Andral."—*Dublin Quart. Journ. Med. Sc.*, Nov. 1862.

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27. *New Means of Distinguishing Diabetic Urine.*—M. PAILLON, of Sainte-Foy-lez-Lyon, has observed that diabetic urine, if allowed to stand for ever so long a time exposed to the air, does not, like ordinary urine, emit any smell of decomposition. A specimen which had been exposed to the air during a fortnight had only become somewhat lighter coloured and a little muddy, but gave out no nauseous odour. This urine was submitted to M. Burin du Buisson for analysis, and he failed to discover any sugar; but, on being told of the length of time which had elapsed since the urine was passed, he examined it again, and readily discovered alcohol, into which the sugar had become transformed. M. Paillon suggests that the absence of odour after long exposure to air would form a useful test of the presence of sugar in urine in cases where the physician might not have chemical reagents at hand.—*London Med. Rev.*, Aug. 1862, from *Gazette des Hôpitaux*, 3 Juillet.

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28. *Production of Carbonate of Ammonia in the Blood in Uræmic Poisoning.*—Dr. ALEX. PETROFF, of Dorpat, has published some very important researches, which go to support the theory of Frerichs. The object of these investigations was chiefly to examine the validity of Oppler's statements

founded on experiments of his own, in opposition to Frerichs. Oppler stated that Frerichs' second and third inductions were incorrect, and that the theory based on them was therefore groundless. He declared that after artificially producing uræmia in animals (by removal of the kidneys or ligature of the ureters), he was unable to detect carbonate of ammonia in the blood or secretions; and, moreover, that the injection of carbonate of ammonia into the venous system of animals fails to produce any symptoms truly comparable to those of uræmia. He declared that in uræmia, as Hoppe had long since stated, the quantity of urea and extractives in the blood, and the quantity of extractive in the muscles, was abnormally increased. Dr. Petroff's present investigations were made with the sanction and assistance of Professors Bidder and Schmidt. Dogs and cats were chloroformized, and the operation of nepheotomy carefully performed. After recovery from the chloroform, the jugular vein was opened, at various distances of time from the operation, and the blood received into two vessels each containing absolute alcohol. One of these portions of blood was to be tested for urea, a few drops of acetic acid were added to this, and the mass allowed to stand for twenty-four hours in a cold place, filtered, and the filtrate evaporated to a dry mass, which was repeatedly washed with water and with absolute alcohol, and then set aside to crystallize over sulphuric acid. Prismatic needles of urea were thus obtained, and the presence of urea was confirmed by other tests. The other portion of blood, examined for carbonate of ammonia, was received also into absolute alcohol and then at once distilled, the distillate being received into dilute hydrochloric or sulphuric acid of known strength. The quantity of *free ammonia* was thus decided: while the ammonia in combination was estimated by the examination of the residue left from the distillation. The bile, the contents of the stomach, and other fluids of the body, were also examined for ammonia. Dr. Petroff also made a series of very careful experiments on the comparative effects of injections of ammonia into the blood, and the artificial production of uræmia. The following are the general conclusions at which he arrives: 1. When the kidney function is interrupted, carbonate of ammonia is formed in the blood. 2. Injection of carbonate of ammonia into the blood produces symptoms strictly comparable to those of uræmia. 3. The degree in which these symptoms appear, and their character, depends on the proportion of ammonia in the blood, and the circumstances in which it exists there.—*London Med. Rev.*, Nov. 1862, from *Virchow's Archiv.*

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29. *Membranous Cysts in the Interior of the Urinary Bladder.*—Dr. R. Knox states (*Med. Times and Gaz.*, Aug. 2, 1862) that his attention was drawn, a short time since, to this subject by a deplorable case, of which some account was given in the medical journals. From what appeared in the brief narrative, the nature of the case did not seem clear. A lady, during her confinement, suffered severely from retention of urine, and although subsequently relieved, at last sunk, in consequence, seemingly, of the sufferings caused by the retention. A post-mortem, made by Mr. Spencer Wells, disclosed a condition of the urinary bladder such as was to be expected from an intense inflammation of the mucous membrane of the viscus. A sac, seemingly composed of the mucous membrane itself, lay coiled up in the interior of the bladder. It was also surmised that vascular fibres might be seen on one surface of this sac, so that during the progress of the disease, according to this view of the case, two layers of the walls of the urinary bladder had sloughed and lost all connection with the remaining walls of the organ.

This view of the case seemed to Dr. K. to be untenable, and he felt disposed "rather to think that the cyst or detached membrane in question could be nothing more than a pseudo-membranous bag, formed in the usual way by an inflamed mucous surface, as we find so frequently in cases of croup, etc. Happening shortly thereafter to meet Dr. Tanner, I discussed the matter with him, and narrated to him the following remarkable case, which occurred in the practice of Mr. Liston, and of which I was not only an eye-witness, but acted throughout as his assistant.

"Late one evening Mr. Liston called on me and asked me to accompany him and to assist him in an operation he contemplated, and in order not to lose time

he would narrate the particulars as we walked along. They were as follow: The patient was a man in humble life; he had been unwell for some time, complaining chiefly of an obstruction to, or a difficulty in discharging the urine from the bladder. On passing a catheter, Mr. Liston felt, or fancied he felt a soft, yielding, but obstructing body in the prostatic portion of the urethra. This readily gave way before the catheter, which then passed into the bladder, but on being withdrawn it was followed by the foreign body, which immediately reoccupied its former position. Mr. Liston then explained to me his view of the case, which was this: 'A cyst or false membrane of the form of the bladder itself, occupied, as he conjectured, the interior of the bladder, and were this removed by an operation the patient might recover.' The boldness of the proposal, or rather the diagnosis itself, astonished me, and I told him so; but on introducing the catheter, and meeting with the same phenomena as he had described, I at once gave into his view. We were alone. With a straight sharp-pointed bistoury, which he usually carried in his waistcoat pocket, he opened the bladder above the pubes, and as the incision proceeded there escaped from the bladder a foreign body resembling a cyst or false membrane, as he and I concluded it to be, and of the shape of the interior of the bladder. It escaped into my hands. The wound was closed simply; and as we returned home, bringing the preparation with us, I could not but observe to him that of all the bold and successful operations he had performed, none equalled in merit the diagnosis he had just made, and that half a century might elapse before he made such another. The patient recovered and lived for some time.

"From that day until the present time I heard no more of the case, and thought no more of it until the occurrence of the one mentioned by Mr. Spencer Wells to the Pathological Society. Discussing it with Dr. Tanner, I suggested that we should look for Mr. Liston's preparation in the museum of the College of Surgeons, to which museum I knew that Mr. Liston had presented a few rare pathological specimens he had brought with him, many years ago, to London. To my surprise, we found a layer of muscular fibres on the cyst, thus throwing doubts over the nature of the preparation itself. There was the identical cyst, or pseudo-membrane as I had always fancied it to be, evidently complicated with another structure, whose presence there could not be readily explained on the pathology of Baillie or Hunter. I have again re-examined the preparation with Mr. Henry Thomson, whose great experience and extended inquiries into prostatical and vesical diseases are well known. I think that the presence of muscular fibres forming a sort of layer of the sac, cannot well be doubted, so that the preparation is not altogether what Mr. Liston and I took it to be—a simple pseudo-membrane composed of but one tissue; and now arose the question in my mind, whether I had not seen or read somewhere of the formation of false muscular fibres, the product of inflammation, as well as of the usual pseudo-membrane, for I felt disinclined to believe in the theory that the cyst found in the bladder was in reality the mucous membrane, and a layer of the muscular, in a sloughing state detached from the walls of the cavity. I felt convinced that I had read of a case or two[1] in which a layer of muscular fibres had formed in large masses of exudation, arising from an inflammation of fibrous or cellular membrane. Turning to the learned Vogel, I there found the title of the work, 'Tractatus Anatomico Pathologicus Sistens duas Observationes rarissimas de Formatione Fibrarum Muscularum in pericardio Atque in pleura obviarum.' Leo-Wolf: Heidelberg et Leips. 1832. Vogel quotes Wutzer's critique on it in *Müller's Archiv.*, 1834, p. 45. I never saw Leo-Wolf's preparation, but if the engravings in his treatise truly represented the structures, then undoubtedly muscular fibres had been formed by the same process which gave rise to the effused false membrane on which they rested. But Vogel, whose accuracy is extreme in all such matters, assures us (p. 184) that 'the microscopic examination (the only decisive test) had been altogether neglected, as in the cases observed by Leo-Wolf.' But simple non-striated fibres are often formed as independent (fibroid) tumours, and causing hypertrophy of the muscular walls of cavities. The question then is, what is the real nature of the seemingly muscu-

[1] The treatise was at one time in my own library, but has been lost.

lar fibres to be distinctly seen in the cyst removed from the urinary bladder by Mr. Listor. Of those somewhat more doubtful in the first case discussed by Mr. Spencer Wells, in his second case, and in the very interesting case of Mr. Maunder, which he kindly related to me, and which I am indebted to Mr. Henry Thomson for an opportunity of examining with the utmost attention, assisted with all his knowledge of these structures. A brief statement of the history of these cases may ultimately lead to some important investigations, and clear up a pathological question of the obscurest. For my own part, I feel disposed to reduce the whole phenomena to one simple law of morbid epigenesis of muscular fibres, real or apparent."

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30. *Inversion of the Urinary Bladder through the Urethra, with large Prolapsus of the Rectum, in a Female Child.*—Dr. Beatty communicated to the Dublin Pathological Society an example of this. The subject of it was a female child, aged one year and eleven months, which was sent from the country to the City of Dublin Hospital, with a statement that there was something wrong with the genital and urinary organs. She was a fine, strong, handsome child. The appearance of the parts was most extraordinary. Just between the labia there was a scarlet tumour about the size of a chestnut; and it at once struck him that it was the inner surface of the bladder, similar to what has been seen in cases of vesico-vaginal fistula, or of malformation where the anterior wall of the abdomen is open above the pubes, and the inner coat of the bladder protrudes. Upon touching it with his finger the child cried violently. It could be forced back, and even replaced by pressure; and the urethra was sufficiently large to admit of the easy passage of his forefinger into the replaced bladder, showing the case to be one of complete inversion of the bladder through the urethra. The mother told him that the inversion of the bladder did not take place until the child had a fit of crying when it was twelve months old. There was also a large prolapsus of the rectum, which occurred when she was nine months old, in consequence of an attack of diarrhœa. The child remained in hospital up to Monday last, and continued quite well. Dr. Beatty kept her in for the purpose of devising some means to remedy the defect. On Sunday morning, however, she was attacked with severe croup, which terminated in her death on Monday evening. He was thus enabled to obtain the specimen now before the society, showing the bladder turned inside out through the urethra. It had now lost some of the scarlet colour, and something of its size. In the prolapsus of the rectum there was nothing remarkable; but, combined with the other defect, it gave the parts a very curious appearance. The uterus was *in situ*, and the ovaries were very large for a child of her age. Dr. Beatty had never seen another instance of such inversion. The child died of croup, as he before stated, and the specimen showed a very perfect, well-formed false membrane, lining the trachea, and forming a tube within it. The gentleman who made the *post-mortem* examination told him that the deposit of false membrane did not extend lower down than the bifurcation of the trachea.—*February* 22, 1862.—*Dublin Quart. Journ. Med. Sc.*, Aug. 1862.

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31. *Verruca Necrogenica.*—Dr. Wilks exhibited to the London Pathological Society (Oct. 21, 1862), wax models of disease of the hands produced by post-mortem examinations. The patient, a young man, had been employed in the post-mortem-room. The models illustrated the peculiar affection of the skin produced by the acrid fluids of the dead body. The knuckles of both hands had upon them brown, circular, raised patches of morbid epithelium, giving the appearance somewhat of epithelial cancer. The chronic and obstinate nature of these warty excrescences was most remarkable, for, if removed or portions be picked off, they again grow, and remained for years. Dr. Wilks had, on more than one occasion, recognized this disease in strangers, and suggested its cause, for which reason he believed it to be peculiar and characteristic; at least, he knew of no other irritants which produced exactly the same effect. There was no name already in use which was strictly applicable to it, since epithelioma, lepra, &c., were already in use for definite affections; he had, therefore, simply styled it warty or *verruca necrogenica.*

Mr. Spencer Wells asked if the disease was not the same as that known as the Anatomical Tubercle of Pinel. He had seen it in several persons, but had only once observed it in any one out of the profession. This was in a clergyman who was fond of bird-stuffing.

Dr. Bristowe said that he had had it two years, and had watched it closely. At first it was a small pustule, which was covered by a scab, consisting of epithelium with little conical processes. It never contained any nested cells. At first he applied to it mild caustics, as nitrate of silver, but these only made it more irritable. He, therefore, destroyed it by one free application of the acid nitrate of mercury.

Dr. Peacock said that when in Edinburgh he was troubled with a similar affection. He agreed with Dr. Bristowe that mild caustics only made matters worse. After a few years it disappeared. At the first he had several boils, but one of them never sloughed, and went on to the state mentioned.

Dr. Harley said that last year he was consulted by a man whose duty it had been for many years to assist in making post-mortem examinations at University College Hospital. At the time when he saw him, however, he was acting as porter. The hands were covered by tubercles. On scraping them and putting the scrapings under the microscope, he found great hypertrophy of the epidermis. He did not think that the disease extended to the true skin. He advised the application of nitrate of silver, and this was followed by some benefit during its use.

Dr. Wilks said that he supposed all were agreed as to its pathology—that it was an affection of the epidermis only. In his own case he had applied the tincture of iodine with benefit.

The President said that some years ago he was consulted by a medical man for a similar affection. The application of the strong tincture of iodine cured it.

Dr. Crisp said he believed that, if pathologists would oil their hands before they made their examinations, they would not suffer from such affections.—*Med. Times and Gaz.*, Oct. 25, 1862.

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32. *Eczema of the External Auditory Meatus.*—We find in the *Glasgow Medical Journal* (April, 1862) some practical remarks, by Dr. T. M'CALL ANDERSON, on this not uncommon, and so far as our experience goes, troublesome and very refractory affection. "It may occur," he states, "in connection with eczematous eruptions on other parts of the body, but the local causes specially operating are the introduction of pins, ear-picks, and acrid substances into the meatus. The patient sometimes complains of a feeling of fulness in the ear, but the itching is the most annoying symptom, to allay which, pins, ear-picks, &c., are frequently introduced, so as to scratch the parts—the finger-nails, which are employed for a like purpose on other parts of the body, being inadmissible. In this way the irritation is relieved for the moment, and the disease proportionately aggravated. The calibre of the meatus is narrowed, often so much so that the membrane of the tympanum cannot be distinctly seen, the amount of the narrowing being dependent upon the amount of infiltration of its walls. There is always exudation from the meatus at some stage of the disease, and the fluid which exudes is either milky or watery, and sometimes so extensive as almost to soak the pillow at night. If the ear is not frequently washed out, the exudation has a very bad odour. At other stages the meatus may be quite dry and scaly, and in connection with this condition, I have frequently noticed the surface of the membrane of the tympanum to be dry and scaly also. Sometimes large quantities of epithelium are thrown off from the meatus, so as to block it up, and cerumen is sometimes mixed up with the epithelial mass. The secretion from the ceruminous glands is, however, for the most part arrested in this affection. The hearing power is often not much impaired; the amount of deafness depending upon the amount of infiltration of the walls of the canal, upon the quantity of epithelium and discharge accumulated in the meatus, and upon whether the drum and mucous membrane of the cavity of the tympanum are implicated or not. Sometimes the deafness is so great that the tick is only heard when the watch is close to the ear. The cure is often tedious, as it is impossible to apply local remedies so well to the meatus as to the skin; and strong

local applications must be used with caution on account of the delicate structures at the bottom of the meatus. Internal medicines appear to exercise very little influence over the eruption. Arsenic, for instance, which sometimes removes eczema with almost incredible rapidity, is, as far as my experience goes, quite useless; and, indeed, I have noticed that a limited eruption is, as a general rule, much less under the influence of internal remedies than one which attacks a large portion of the cutaneous envelop. Purgatives are useful as regards a temporary alleviation of this complaint, but I doubt much if they produce any very permanent beneficial effect. We must trust, then, mainly to local measures, the first of which consists in washing out the meatus once or twice daily with tepid water, with a good syringe, such as that manufactured by Messrs. Savory and Moore, instead of those trumpery little glass things which apothecaries usually keep, and which are too frequently made in the most careless manner. If the meatus is not exuding, but, on the contrary, is dry and scaly, it may be necessary to drop a little almond oil into it, so as to soften the particles and facilitate their subsequent removal with the syringe. After all the effete matter has thus been removed, I am in the habit of painting the walls of the meatus with solutions of potassa fusa (commencing usually with gr. x to the ounce of water, but the strength must be proportioned to the severity of the disease). A small paint brush is dipped in the solution, and gently stripped, so that it does not contain too much fluid, and then insinuated into the meatus for the extent of half an inch, and twisted round, so that the walls of the canal are entirely moistened by the fluid. This usually causes considerable pain, which, however, subsides in a few minutes. If the action is very severe, it may be checked at once by the injection of tepid water; for which purpose I am in the habit, previous to the operation, of filling a syringe with it, and holding it in readiness for use if required. If a strong solution is used (*e. g.* ʒi to ʒi), we must be careful not to take up so much fluid with the brush that it drops upon the drum, as the applications which are appropriate to the walls of the canal cannot always be applied with impunity to the delicate structures at the bottom of the meatus. In cases where the drum participates in the disease, as usually happens, a weak solution (*e. g.* potassa fusa, gr. iij to ʒi of water) may be used as an injection night and morning, which is sufficiently strong to improve its diseased condition in most cases. A strong solution (ʒi to ʒi of water) may usually be painted on the walls of the meatus every two or three days, but the more severe the affection, and the weaker the application, the oftener must it be repeated. In the intervals between the applications—which I never intrust to the patient if the solution is strong—I direct him to syringe out the ear twice daily with tepid water, as before mentioned. The beneficial effects of this treatment are sometimes very marked; the hearing often improves after a single application, the uneasiness in the ear subsides, the meatus becomes wider, and a large quantity of serous fluid exudes, which accounts for the improvement. If the treatment is to be successful, each successive application will be found to improve matters; the amount of serum exuded will gradually diminish, and the meatus assume its healthy appearance. After the disease appears to be gone, a weak solution of potassa fusa (gr. iij to ʒi of water) may be painted on the canal every day or two for a short time. Some recommend the use of a solution of nitrate of silver (ʒi to ʒi), which is used in the same way as the potassa fusa solution, but it is not nearly so effectual. Leeches are of no use unless acute pain occurs in the ear, indicating an acute attack of inflammation, and blisters behind the ears, recommended by Toynbee and others, are, in my experience, perfectly useless."

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33. *An unusual Abnormal Condition of the Mucous Membrane of the Tongue and Mouth.*—Dr. Neligan describes in the No. of the *Dublin Quarterly Journ. of Med. Sci.* for August last a very remarkable and highly interesting case. The subject of it was a gentleman who presented himself for examination for life insurance, and the only feature worthy of notice (all else being perfectly healthy) was, that "the tongue was singularly affected, the natural membrane covering it and the inside of the cheeks being changed into a thick white skin like a kid glove, and uneven on the surface." Although the author had seen nothing like

it before, and could give no opinion regarding it, he thought it well to advise an extra rate of five or seven years to be charged, "the chief reason being, that if any accident occurred to the tongue in its abnormal state cancer might result." About four years and a half after this the patient accidentally bit his tongue; it became very sore, and he was in consequence unable to attend for examination for a further assurance which he was desirous of effecting, and the further history of the case is thus given: "It seems that, as the result of this bite, a small tubercle about the size of a pea formed on the edge of the tongue, beneath the mucous membrane, its situation being on a level with the molar teeth. For this he sought the advice of some of our eminent surgeons, who differed in opinion as to the necessity of an operation, the result being that he placed himself under the care of one of them who treated the disease with caustic applications. After some time, however, hemorrhage set in, necessitating an operation which he survived only a few months, cancer having invaded the glands of the neck."

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

34. *Rapid Spontaneous Cure of Popliteal Aneurism.*—CAMPBELL DE MORGAN, Esq., Surgeon to the Middlesex Hospital, relates (*Med. Times and Gaz.*, Nov. 22, 1862) the following very remarkable and perhaps unique case of this, and one which opens a wide field for speculation as to the cause of the sudden arrest of the pulsation in the aneurism.

"George H. was admitted into the Middlesex Hospital, under my care, on January 4, 1862. He was a tolerably healthy-looking man, rather below the average height; his muscular system was well developed. He had been once a chimney-sweeper; he then became a stoker; and was now a shoemaker. His habits were somewhat intemperate.

"He was sent to the hospital by Mr. Shepherd, a former pupil of the hospital, to whom he had applied in consequence of a painful swelling in the right ham, and who, on recognizing the nature of the case, at once sent him to the hospital.

"The swelling was at this time small, and situated entirely between the tendons, which were not displaced by it. It was about two and a quarter inches in diameter. The knee was an inch more in circumference than the opposite one. The tumour pulsated strongly, and gave rise to a considerable amount of pain. There was no evidence of any cardiac or renal disease, or of diseased arteries elsewhere. The pulse was 72, regular and firm. The aneurismal thrill and bruit in the tumour were very well marked.

"The account he gave of the occurrence of the tumour was, that on the day before Christmas-day, after putting himself out of breath by running, he was shutting up the shop windows, when he felt something give way in the ham, and a small lump appeared. For a day or two he paid no attention to it, but three days after he felt an aching pain, and noticed that the lump beat strongly. Five days after its first appearance, *i. e.*, December 29, he was unable to walk, and the leg was stiff. Two days later, the pain and throbbing had so much increasd that he was obliged to give up work.

"On his admission, an attempt was made to treat the case by Mr. Ernest Hart's plan of bending the leg on the thigh. The flexion stopped the pulsation; but in a short time the posture became so irksome to him that he removed the bandages, and would not again submit to the treatment.

"Four days after, the treatment by pressure was begun, the pad of the tourniquet being placed about the situation of the junction of the upper and middle third of the thigh. A moderate amount of pressure checked the pulsation in the aneurism. The instrument was to be worn during the day, with occasional intermissions, as at meal-time, and it was taken off at night. The tumour had at this time increased a little, and measured over two inches and a half in diameter.

"At first he bore the pressure pretty well, but he was evidently not very intelligent, and was, moreover, somewhat self-willed, so that he did nothing towards aiding the efforts of the surgeon. In three or four days after the application of the pressure, he became restless and feverish. The pulsation was not so marked as at first, but this was in some degree owing to the general swelling of the limb from the pressure. Still the pressure was maintained, and the pulsation was generally kept in check. On the eleventh day, however, the pain in the tumour increased, and the tumour itself was evidently larger. The pain was so severe as to prevent his sleeping. Although he suffered as much when the instrument was off as when it was on, he thought the pain was brought on by it, and was very averse to continuing its use. By the aid of morphia internally, and of lead and opium lotion to the knee, the pain was for a time relieved. On the thirteenth day, the pain having been very severe during the previous night, he was suffering so acutely in the tumour, and he had become so excessively irritable, that no persuasion would induce him to have the instrument reapplied on the thigh. I got him, however, to try the Read's compressor, which encircles the pelvis, and acts on the artery at the groin. A moderate amount of pressure served to stop the pulsation. At this time the beat was far more violent than at the time of his admission, and the tumour was still increasing in size. It was, nevertheless, somewhat more solid. The skin was red, tense, and shining. The arteries around the knee could be felt pulsating distinctly. Although no pressure had been used since the previous afternoon, the pain in the tumour and about the knee was extremely severe. There was also considerable tenderness; the examination of the part gave rise to pain; but still it seemed as if it was rather the skin than the deeper parts which was the seat of this, for deeper pressure did not appear to increase it. The pain appeared to be more due to the great tension of the tumour than to any inflammation within it.

"I had, at this time, little hope of being able to continue the pressure treatment under any modification, and directed the house surgeon to call my colleagues to a consultation on the following day, believing that it might be necessary to tie the artery. The Read's compressor was meanwhile applied, in the hope that the patient might be able to tolerate the pressure in a new situation for a time, and that the violence of the pulsation might be checked until it was determined what course should be pursued. It was put on at 2.30 P. M. He only allowed it to remain for about a quarter of an hour; then he took it off, and declared that he would undergo any operation, but that he would not bear the pressure any longer. Still it was not the pressure which was causing his sufferings; they continued after the instrument was removed; and the house surgeon, Mr. Marshall, found him, shortly after he had removed it, in such violent pain, that he gave him a full dose of opium. This produced no immediate effect, and a quarter of an hour afterwards Mr. Marshall administered a hypodermic injection of morphia. At this time, about a quarter past three, the tumour was beating as violently as ever. About twenty minutes afterwards, on the house surgeon going into the ward, the patient called his attention to the fact that the pulsation had ceased, and told him that this had taken place very shortly after he had left the ward, and, as he (the patient) believed, suddenly. On examination, it was found that no beating whatever could be detected. The man's sufferings were ended. The pain was trivial, compared with what he had been enduring. The tumour felt firm and doughy; the general tension of the limb was less, but it presented nothing remarkable in temperature or colour.

"From this time there was no trace of pulsation, nor could any sound be heard through the stethoscope. On the following day, the tumour was considerably smaller, quite firm, and free from pain and tenderness; the engorgement of the limb was subsiding rapidly. For many days, the leg, below the knee, was a few degrees warmer than the opposite leg, as is frequently observed after ligature of the vessel. None of the arteries of the leg or foot could be felt to beat, while the vessels around the knee were large, and pulsated vigorously. The femoral artery could be traced by its pulsations from the groin to within an inch of the tumour. A cure was effected, in short, much in the same way, so far as the appearance of the sac and its contents was concerned, as if a ligature had been placed on the femoral artery."

35. *Garibaldi's Wound.*—The discussion which has lately excited the public as well as the profession, as to whether or not the ball with which the illustrious Italian patriot was injured, remained in the wound, has been definitely solved. Professor ZANETTI actually removed the projectile on the 23d of November last, thus confirming the diagnosis of Nélaton.

Respecting this favourable result M. Nélaton made the following remarks to his class at the Hôpital des Cliniques:—

"When we consider the variety of opinions which have been offered respecting the presence of a foreign body in the wound, it is evident that the favourable result lately obtained would have been very long delayed had we not means of accurate diagnosis. Let me remind you that the wound is on a level with the anterior edge of the inner malleolus, which latter has been fractured by the ball; the wound runs in a transverse direction, and the probe, introduced about one inch into it, came in contact with a hard body. The sound heard on striking was dull, and very unlike that produced by meeting with necrosed or carious bone. The ball was lodged in front of the neck of the astragalus, though its presence could not be detected by examination of the instep in consequence of the tension of parts in that region. I was, however, perfectly certain that the ball was there, and advised gradual dilatation. But M. Porta, who explored with his finger, did not agree with me.

"On my return to Paris, I endeavoured to contrive exploring instruments which should convince those who were not of the same opinion as myself. I thought, first, of a sound ending in a kind of file which could take off a few metallic particles. I had some constructed; but M. E. Rousseau gave me the idea of an instrument which would bring away particles of metal. We had, therefore, a probe made, to the end of which was fixed an olive-shaped body, made of unpolished china, upon which mere contact would leave a mark of the projectile, and prove its presence. M. Charrière made several instruments of this kind, composed of a silver stem, ending in a china knob. The mere rubbing of this instrument against lead is sufficient to make a stain, which neither the soft parts nor the morbid secretions could obliterate; simple rotation of the instrument upon its axis fixes upon it a kind of meridian.

"But affirmations of mine are not sufficient—proof is the main thing; nor has this been wanting, for, with this instrument, Professor Zanetti became so certain of the presence of the ball that he forthwith extracted it.

"Other instruments have been proposed to diagnose a ball at the bottom of a wound. M. Favre, Professor at Marseilles, has invented the following: Two conducting wires are placed in a sheath, or the two electrodes may be covered by an isolating substance. These wires are in communication with a battery of only one couple, and a galvanometer is fastened on one of the wires. If you introduce the end of these into a wound, the contact of the soft parts, the bones, or pus, is not sufficient to establish a current; but if the ends come in contact with a metallic body, the needle of the galvanometer will rise, this being a proof that the circuit is complete. Only one couple, however, should be used, so as to avoid the decomposition of the fluids in the wound, which decomposition would immediately give rise to a current."

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36. *Old Gunshot Injury of the Tibia; Recent Fracture of the Femur.*—Mr. TUFNELL exhibited to the Pathological Society of Dublin (Jan. 25, 1862) the tibia of an old man, aged 78, who, 52 years before, at the battle of Busaco, had been wounded by a musket-ball. The bullet had lodged in the cancellated structure of the head of the bone, and been removed from thence by means of a trephine. The cavity formed by the ball had never filled up, but remained an open, discharging wound, lined by a pyogenic membrane, and daily secreting a quantity of fetid pus. The integuments were adherent around the edge of this opening. No treatment had been adopted beyond keeping the part clean, and placing over the opening into the bone a piece of linen smeared with grease.

The presence of this cavity in the head of the bone had not caused much annoyance, and for five-and-forty years he had laboured regularly as a bricklayer's assistant.

About six years since, finding himself to be getting infirm, he became an in-

pensioner of Kilmainham Hospital, where he remained until the period of his death, which arose in the following manner: Like most old soldiers he was given to drinking, and took his liquor freely, but not to prejudicial effects, until two days before his decease, when he got very drunk, and fell helplessly whilst crossing his room, fracturing the left femur through the trochanters by the direct violence of the blow.

When brought to the infirmary the limb was shortened, but not to any great degree. The foot everted; and before the groin a considerable projection formed. He complained of no pain, but was incoherent, and this, in all probability, resulting from intoxication more than shock. He had been suffering for some days from diarrhœa. Stimulants and support were given, but he never rallied, and died in 40 hours from the receipt of the injury.

Upon examination of the parts in the vicinity of the fracture, they, and indeed the whole thigh, on its front and outer aspect, were found gorged with black blood, every tissue being infiltrated with it. The fracture of the femur extended obliquely through both trochanters, the upper portion of the lower fragments being in front of and lying upon the upper fragment.

With reference to the cavity in the head of the tibia, it differed greatly from that observed in a somewhat similar case by the late Sir George Ballingall, of Edinburgh, and reported in his *Military Surgery Museum*, in this respect, viz., that the enlargement of the head of the bone was, in his case, excessive, whilst here its size was in no way affected.

In Sir George Ballingall's case the individual had lived to a very advanced period of life, labouring, too, for his bread, but working as a boatman; and, finding inconvenience from the oozing of pus, he had plugged the orifice with a wine bottle cork. Nature, to resent this irritation, had thrown out new bone, whilst absorption, by the pressure of the foreign body, had, at the same time, been going on from within, necessitating the enlargement of the plug, until, at the period of his death, it required a piece of deal as large as a bung, wrapped round with old linen, to stop the vent.

Each day the old veteran used to take out the stopper, and holding his leg over the side of the boat, wash out the cavity well with sea water, and then close it for 24 hours, when the process was repeated.

Mr. Tufnell was indebted to his friend, Dr. William Carte, physician and surgeon to Kilmainham Hospital for the opportunity of exhibiting this case.—*Dublin Quart. Journ. Med. Sc.*, Nov. 1862.

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37. *Blow on the Head—Sudden Death two years after from the Injury.*—M. de Closmadeuc communicated to the *Société de Chirurgie* a case illustrating the propriety of giving a cautious prognosis in cases of violent blows on the head.

A soldier, in leaping over a rampart, fell on his head. After some moments loss of consciousness, he recovered and returned to his quarters. He resumed his duties, and his health appeared uninjured. Nevertheless, he was affected at times with headache, which lasted for some hours, and sometimes for two days. Two years after his fall he died suddenly on the field during drill. For some time previously he had lost flesh, and his countenance was altered, but his intellectual functions and locomotive powers were unimpaired.

On *post-mortem*, an abscess was discovered in the white substance of the brain; this abscess was evidently not of recent formation. By the side of this abscess was a recent ventricular hemorrhage, produced by the sudden rupture of the septum which separated the abscess from the ventricle; and this hemorrhage had produced sudden death.—*Gazette Hebdom.*, 5 Sept. 1862.

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38. *Reunion of Intra-capsular Fractures of the Femur.*—M. Fabri, of Bologna, has published some interesting cases in which reunion followed this ordinarily intractable fracture. The first was that of a man whose body was brought to the dissecting-room, and who had long used crutches. An intra-capsular fracture was discovered which had been perfectly reunited by the formation of an osseous substance. Previous to the occurrence of osseous union, however, so much displacement and separation of the fragments had taken

place that lameness resulted. The spongy substance of the head was united with that of the neck by the medium of a compact layer of new bone, four millimetres thick. In the second case (a man æt. 70), the circumstances were similar, only the union was by means of singularly dense cartilage, instead of bone. In neither of these cases was there any penetration of the neck of the femur into the spongy tissue of the great trochanter. In a third case (a man æt. 77) the patient was able to walk in less than a year after the accident, which he survived for seven years. Complete osseous reunion was found, on post-mortem examination, to have taken place.—*London Med. Rev.*, Aug. 1862, from *Presse Médicale Belge.*

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39. *Portion of Food Impacted in the Larynx.*—Mr. SPENCE showed to the Medico-Chirurgical Society of Edinburgh (2d July, 1862) a very remarkable preparation, for which he was indebted to a former pupil. A little boy, between eleven and twelve years of age, had been for some time subject to paroxysms of difficult breathing, and in the intervals had huskiness of the voice. While at dinner one day, he was suddenly attacked with urgent dyspnœa, which his parents, however, believed to be merely one of his ordinary paroxysms. A medical man was immediately sent for, and arrived very soon; in the meantime, the parents had a warm bath prepared, which was the treatment usually adopted for the spasmodic attacks. On his arrival, the doctor had him put in the bath, and passed his finger into the pharynx; cold water was poured over the boy, and consciousness was restored. On being asked if he felt any pain, he placed his hand over the windpipe, and said "here;" and immediately expired. On post-mortem examination, the whole of the lower part of the larynx and upper part of the trachea was occupied by a piece of meat, so firmly impacted, that, as could be seen, a bristle could hardly be passed along. Under these circumstances, it was very remarkable that the boy could have breathed for a single instant. In writing to make some inquiries regarding the history of the case, Mr. Spence had been particular to ask whether the body might not have been pushed down to its present situation. The answer was decidedly in the negative, the medical man having merely swept his finger round the back part of the mouth. A number of enlarged glands had been found pressing upon the trachea, which had probably been the cause of the previous attacks of difficult breathing.—*Ed. Med. Journ.*, Sept. 1862.

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40. *Tracheotomy Tube dropped into Left Bronchus.*—Mr. SPENCE mentioned to the Medico-Chirurgical Society of Edinburgh (June 4, 1862) the particulars of a rare accident which had come under his notice. A man had had tracheotomy performed several years ago by Mr. Edwards, and had since worn a double tube. Yesterday, while riding on horseback, the rim of the tube, which had been gradually wearing, gave way, and it fell, as the man expressed it, "into his chest." The man went at once to Mr. Edwards' house, but as that gentleman was from home, his assistant put in another tube and sent him to the hospital, where he came under Mr. Spence's care. When Mr. Spence saw the patient he was breathing quite freely, and the sounds on auscultation were very much the same on the two sides of the chest. A probe was in the first instance passed down into the right bronchus (into which it was generally said that foreign bodies fell), but nothing was felt; it was then passed into the left bronchus and the tube was at once felt. An attempt was then made to extract the tube without enlarging the wound, but was unsuccessful. Chloroform was then administered, the opening was enlarged by cutting through two or three of the rings of the trachea, a pair of bent forceps was introduced, the tube was seized, drawn to the opening, and then extracted. Mr. Spence observed that so far as he knew this was the only case of the kind, but it should teach cutlers to make their tubes in two lateral halves and then join them together; for when, as at present, the shield was fastened to the tube, the soldering must in course of time give way.—*Ed. Med. Journ.*, Aug. 1862.

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41. *Use of Nicotia in Tetanus and in Poisoning by Strychnia.*—Professor S. HAUGHTON laid before the Royal Irish Academy, in 1856, some experiments

made by him on the physiological action of nicotia and strychnia on frogs, which appear to show that the action of these two alkaloids are antagonistic to each other, at least in frogs. After reading a case related by Dr. O'Reilly, in which an infusion of tobacco leaves had been successfully administered in a case of poisoning by strychnia, it occurred to Mr. H. that nicotia might be usefully employed in tetanus as well as in strychnia poisoning. Through the kindness of the physicians of several of the Dublin hospitals, Mr. H. has had the opportunity of testing the correctness of his views, and in a communication made to the College of Physicians in Ireland (March 19, 1862), he relates several cases in which the nicotia was used with advantage.

The first case was one of tetanus following an extensive and severe burn, in which the nicotia relieved the agonizing pain, and relaxed the spasms, but the patient died from the attendant surgical double pneumonia.

The second case was one of idiopathic subacute tetanus from exposure to cold, in which during eleven days 26.4 grains of nicotia was given. The patient recovered.

The alkaloid in this case produced: 1. Immediate relaxation of the muscles of the abdomen, back, and diaphragm.

2. It caused cessation of delirium.

3. There was a slight tendency to cause increased circulation, to the extent of 10 beats per minute.

4. It caused profuse sweating, which exhaled an intolerable odour of snuff, not of tobacco.

5. It had a tendency to produce deep sleep.

6. It failed to control quickly the adductor muscles supplied by the obturator nerve; and even when the hamstring muscles gave way, the adductors refused.

The third case was an attempted suicide with strychnia, in which an infusion of tobacco was given, which produced vomiting when all other means had failed, and further counteracted the action of the strychnia already absorbed.

Mr. H. also gives a brief notice of a case of traumatic tetanus, under the care Mr. Tufnell, at Baggot Street Hospital, successfully treated by nicotia.

The nicotia was given in doses of half, 1, 2, and 2½ drops, each drop containing six-tenths of a grain of nicotia.—*Dublin Quarterly Journ. Med. Sci.*, Aug. 1862.

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42. *On the Use of Iodine Injections in Large Acute Abscesses.*—M. Cosmao-Dumenez having had the opportunity of observing, under M. Demarquay, the great utility of iodine in the treatment of acute inflammations and of large abscesses, which ordinarily are so tedious in their course, is desirous of calling attention to the subject. As examples, he relates two cases of deep-seated abscesses—the one in the region of the groin, and the other in that of the buttock—in which a few iodine injections proved rapidly curative, notwithstanding that the amount of pus discharged on opening the abscesses had been very large. Most of the cases observed by the author under M. Demarquay were abscesses, accompanied by much detachment of skin, in the groin, axilla, popliteal space, &c., and examples of phlegmonous erysipelas. The tediousness of the ordinary modes of treatment, even aided by compression, and the frequency with which formidable accidents arise, are but too well known; while the iodine expedites the cure, and obviates these various inconveniences. By its aid, according to M. Monod, suppurative is converted into adhesive inflammation, plastic lymph taking the place of pus. Moreover, a portion of the iodine injected becomes absorbed into the system, as manifested by its appearance in the secretions, and may influence the deteriorated constitution beneficially. The formula employed by MM. Monod and Demarquay is: water, 100; alcohol, 50; iodine, 5; and iodide of potassium, 5 parts, all by weight. When there is great sensitiveness, this may be diluted by one-fourth or one-half of water. As the injection should be made to penetrate into all the sinuosities of the purulent cavity, a syringe strong enough to throw it with force must be employed; and M. Demarquay annexes to the mouth of the syringe a gutta percha catheter. The cavity should be first cleansed out by means of tepid water, the iodine being injected as soon as this has been gently pressed out. The catheter is then to be removed,

and any of the iodine allowed to run out which may do so unaided by pressure. If there are several apertures, they should all be injected—unless, indeed, the iodine entering by one runs out by the others. At the end of forty-eight hours, unless the pus has changed in nature and quantity, the injection must be repeated; and M. Monod states that he has several times seen this mode of treatment cut short those troublesome suppurations which gradually invade almost an entire breast—a disease thus becoming terminated in ten or fifteen days which otherwise might have continued for months.—*Brit. and For. Med.-Chir. Review*, Oct. 1862, from *Bull. de Thérap.*, t. lxii.

43. *Treatment of Chronic Swelling of the Bursa Patellæ, by Puncture and the Injection of a Solution of Iodine.*—Dr. ROBERT KIRKWOOD states (*Glasgow Medical Journal*, Jan. 1862) that the ordinary method of treating chronic swelling of the bursa patellæ, being troublesome, painful, and tedious, and the result seldom satisfactory, he was induced, in 1859, to try the effect of puncturing the tumour, evacuating its contents, and injecting a solution of iodine. The result was satisfactory, and he has now treated three cases by this plan.

His "first case was that of a young woman, a domestic servant, who more than a year before had observed a small, painless swelling, for which she could assign no cause, in front of her right knee. It increased slowly in size, and when I first saw it, was about as large as an orange, and soft and fluctuant. She complained only of the weakness and inconvenience which it occasioned her. With a trocar and canula, such as is used in the operation for hydrocele, I punctured the swelling at the most dependent point, and after evacuating the straw-coloured serous contents, injected a solution of iodine and retained it for a minute or two. The canula being now withdrawn, a piece of lint was placed over the wound, and a short staight splint applied along the limb and retained with a roller. The following day, the patient complained of a little pain in the knee, and there was also slight swelling, which was fluctuant. I passed a probe along the course of the puncture, and evacuated a small quantity of a brownish-coloured serous fluid. There was no constitutional disturbance; the local was so trifling as scarcely to deserve mention; and by the fifth or sixth day, I forget which, the knee, though a little weak, was perfectly well.

"The second case, also occurring in a young domestic servant, bore considerable resemblance to the first, with the exception that from its history it appeared to be the consequence of an attack of acute bursitis; and besides the weakness and inconvenience to which it gave rise, was at times also more or less painful. It was treated in precisely the same way and with the same satisfactory result.

"The third case occurred in a young man, a joiner, and was more recent than the others. The stiff, firm, leathery feel of the tumour gave the idea of a thickened sac, and this, after puncture, was found to be the case. The contents were sero-sanguineous. On two different occasions I passed a probe along the course of the puncture to evacuate a small quantity of fluid; but in five days the knee was well, though by my advice patient did not resume his work till the expiry of a week from the date of the operation.

"It is now about three months since I operated on this case, and the cure up to this date seems perfect. Some thickening still remains, but under the use of iodine paint it has diminished considerably. The second case was operated upon in June of last year. The patient has gone from under my observation, but her knee, her mother informs me, is strong and well, and shows no indications of anything having ever been the matter with it. I saw my first case the other day; no trace remains, and patient states that her knee is as strong as ever.

"In each case, in consequence of a slight feeling of weakness remaining after the operation, though less than before it, I recommended an elastic knee-cap to be worn for a few weeks, by the end of which time the feebleness had disappeared."

44. *Subcutaneous Treatment of Boils and Carbuncles.*—Mr. J. G. FRENCH, Surgeon to St. James's Infirmary, Westminster, states (*London Med. Review*, Sept. 1862) that he has occasionally, during many years, adopted the following mode of treatment of boils and carbuncles with great advantage.

"The extent of the induration of the integument is first carefully examined, and then a tenotomy knife is passed horizontally underneath it, the blade turned upwards, and, the forefinger of the left hand serving as a guide upon the upper surface of the tumour, the hardened structure is cut through, taking care not to wound the surface of the skin; it is, in fact, a subcutaneous division of the disease, and is carried to the utmost extremity of the induration.

"The disease, previously spreading, is at once arrested in the direction of the knife, but it is necessary to make a second puncture at right angles with the first, and thus a crucial incision, or it will still spread in the opposite direction. The bleeding is sometimes considerable, sometimes trifling, and when this has ceased, the whole surface of the tumour should be covered with collodion.

"Immediate relief is felt by the patient as the result of this proceeding, and he is able at once to pursue his ordinary avocations.

"The inflammation speedily resolves, or if any suppuration whatever occurs, it is in very small quantity, and easily finds vent through one of the punctures.

"This operation being somewhat slow and painful it is only where an immediate result is greatly desired that I venture to adopt it, preferring generally the quicker method of dividing the integument completely, but it is interesting to know the fact of its invariable efficacy. An inquiry is often made by the patient whether the malady will return elsewhere if thus suddenly arrested? I do not find that a second boil or carbuncle occurs when thus interrupted more frequently than when the disease is left to take its course; on the contrary, where poultices are used a recurrence is frequent; indeed, this remedy, when used for other disorders, often seems to produce the disease.

"With regard to larger and more neglected carbuncles, where the life of the patient is endangered by their extent, it is worth while making the remark that the disease can at any time be arrested by the knife *while it is still spreading*. But the *crucial* incision is often insufficient where the disease has acquired the size of a cheese plate. It will spread at the circumference between the longitudinal and lateral incisions at some point or other, and an incision made here at once still arrests its progress. A large carbuncle will, therefore, often require to be *starred* to arrest it completely.

"What is called *opening* a carbuncle, that is, making a free incision simply or crucially in the centre, does not, so far as my observation goes, appear to do much good; and I think the doubt about the good effect of operative procedure, which exists in the minds of some, is due to the observation of this method alone."

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45. *How to Relieve Pain in Diseased Bladder.*—The presence of urine, and more especially of uric or phosphatic calculi or concretions at the *bas-fond* of a diseased bladder, sometimes produce violent pains in the bladder, and render all movement painful. In such cases, if the patient be placed on an inclined plane, which, by raising the lower part of the pelvis, throws the contents of the bladder towards the upper and posterior part of the cavity (which is much less sensitive), relief is almost immediately produced, even though other means have been tried in vain.—*Brit. Med. Journal*, Feb. 1, 1862, from *Rev. de Thér. Méd.-Chir.*, Dec. 1, 1861.

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46. *Deafness Consequent on Rheumatism—Noise in the Ears.*—A case of deafness consequent on rheumatism, treated by Mademoiselle Cleret's method, has been related by Dr. Delioux. A cannonier, 51 years of age, had an attack of acute rheumatism six months previously, which passed into the chronic form, and was accompanied by deafness of the left ear, with diminution of hearing in the right ear, frequent buzzing at both ears, but no discharges. Received into the Marine Hospital at Toulon, he was subjected to the instillation of ether in both ears. He immediately felt a kind of expansion in the interior of the ear, accompanied by a slight pain, but at once his conception of sounds became less confused. Next day he declared that he heard with his right ear as well as before his illness. The instillation was now only applied to the left ear, and repeated three times on the following day. On the fourth day the hearing of both ears was perfectly restored. The general rheumatism was treated with

sulphureous baths, and the vinum Ardurani during the following month, under the apprehension that the deafness might return as long as any rheumatism continued.

The composition of vinum Ardurani is as follows: Bulb of colchicum 30 parts; leaves of fraxinus ornus 38 parts; Malaga wine 300 parts. Macerate during eight days and strain off; then add tincture of aconite 8 parts; tincture of digitalis 5 parts. A large teaspoonful to be taken morning and evening.

Dr. Delioux gives two other cases of rheumatic deafness treated in the same way, but in which there was only an improvement and not a complete cure. This he explains by the general disease predominating over the local affection.

Among other facts confirming this view respecting the connection between noises in the ear and imperfections of hearing with rheumatism, and in an especial manner proving the use of instillations of ether in this particular kind of deafness, one related by M. Bellemont should not be omitted. A labourer, 60 years of age, subject to rheumatic pains in his limbs, found after some time that they all became concentrated in his head, and during a year he became so deaf as to give up the enjoyment of conversation. He described a sound in his ears like that of a swarm of bees. After an ineffectual trial of several remedies, M. Berlemont applied two instillations of ten drops of ether at the interval of a quarter of an hour. Immediately he began to hear distinctly. The same treatment has been continued, and deafness and noise in the ears are now completely removed.

A series of similar facts has been received from M. Coursier, the most remarkable of which occurred in children complaining of noises in the ears. In one of these the patient, seven years of age, could not bear the application of the ether. By mixing it with one-half of glycerine the object was accomplished. M. Debout, however, states that although glycerine succeeds in eczematous deafness, yet that it exercises a prejudicial influence in cases of nervous deafness, even when an amelioration has been obtained by ether.—*Glasgow Med. Journ.*, July, 1862, from *Journ. de Méd. et de Chirurgie.*

47. *Difficulties and Dangers attending Catheterism of the Eustachian Tube.*—In a recent article M. TRIQUET describes the principal difficulties attending catheterism of the Eustachian tube, and the accidents to which it may give rise. Difficulty may arise on the part of the patient from extreme timidity, or from indocility in children; and both these may necessitate the use of chloroform. Excessive narrowness of the nasal fossæ sometimes requires the use of a sound of small calibre and but slightly curved, which in such cases must be introduced gently under the lower turbinated bone, with the point directed towards the external wall of the fossa. Sometimes the narrowness is so great that the catheter, on reaching the middle of the nasal fossa, is arrested, and as it were grasped between the septum and the turbinated bone, or between the turbinate bone and the upper jaw. If this be found to occur, and the point of the instrument, being in the proper direction, cannot advance, it must be withdrawn, and again introduced after the patient has been allowed a few minutes' rest.

Difficulties may also arise from the configuration of the inferior nasal fossa. Extreme narrowness may be caused by chronic inflammatory thickening of the mucous membrane; by polypi or fleshy vegetations; by hypertrophy of the lower turbinate bone, or by greater or less unnatural elongation of the bone, with a faulty direction of the curve; by deviation of the septum of the nasal fossæ; by exostosis from the ascending process of the superior maxillary bone, or from the lower turbinate bone. Extreme sensibility of the pituitary membrane, and the pain produced by the least touch, also constitute a serious difficulty. Difficulties may also arise in the introduction of the catheter, from not choosing a proper mode of operating, from using a too large or too curved instrument, or from giving it a wrong direction. M. Triquet introduces the instrument directly into the inferior meatus, with the end resting against the external wall. If it is gently carried on in this direction, the point of the instrument must infallibly reach the orifice of the Eustachian tube, which lies immediately behind the inferior meatus.

The accidents arising from the operation may be local or general. The local

accidents are: 1. Laceration of the inferior part of the nasal canal. This is not of much importance; it causes only slight pain and one or two drops of blood. 2. Extraordinary sensibility of the pituitary membrane may render the contact of the catheter so painful as to cause even the most courageous patient to cry out. In some persons, the contact of the sound with the pituitary membrane produces sneezing. 3. Another result is excessive lachrymation. More or less lachrymation very often follows the first introduction of a sound into the nasal fossæ. Sometimes the tears appear only at the inner angle of the eye; but in lymphatic children, in nervous females, and even in impressionable men, the catheter scarcely touches the mucous membrane before the conjunctiva of the same side becomes rapidly ingested, the eye becomes moist and is turned upwards, and tears flow in abundance. These phenomena are not attended with pain, and generally pass off in a few seconds. Nevertheless, the possibility of their occurrence should suggest great caution in employing catheterism of the Eustachian tube in persons subject to disease of the eye. 4. A few drops of blood often flow during the operation, probably from the Schneiderian membrane being grazed or lacerated by the end of the instrument. But in subjects in whom, as the result of repeated attacks of coryza, the mucous membrane is red and inflated, and, as it were, studded with papillæ full of blood, the simple contact of the instrument may give rise to a true epistaxis, which may always be promptly arrested by the inspiration of a little cold water. 5. The operation may be disturbed by a nervous cough; but this is not of much importance. 6. As a result of simple or granular chronic pharyngitis, or of repeated quinsy, the tonsils may have remained hypertrophied, and it is not uncommon to meet with a spasmodic contraction of the pavilion of the Eustachian tube, when the catheter is about to enter the orifice. In nervous subjects, as soon as the catheter touches the pituitary membrane, the velum palati is convulsively drawn upwards. During these violent contractions, whatever be their cause, the peristaphyline muscles, inserted near the mouth of the Eustachian tube, completely effuse the opening, so that an instrument cannot pass it without effort. If this spasmodic contraction occurs only at the moment when the catheter enters the tube, the point is expelled and falls into the pharynx, and the operation must be repeated. 7. If the surgeon employ too much force to overcome the contraction of the muscles, the mucous membrane may be torn, so as to give rise to the production of emphysema at the first attempt at deglutition or at inspiration. If the patient make a sudden movement of deglutition, or if the surgeon wish to blow in a little air for the purpose of exploring the tube, the patient falls as if struck by lightning; he raises his hand to his neck; the eye is haggard, the face congested, the mouth open, and the voice lost. The symptoms resemble those of œdema of the glottis in its last stage. On forcibly drawing down the tongue with the finger there is perceived to be considerable emphysema, raising the whole of the mucous membrane of the pharynx and even invading the larynx, especially the arytæno-epiglottic folds. It is requisite only to tear with the nail of the finger which holds down the tongue, one of the emphysematous projections of the mucous membrane; the air escapes and the patient recovers. M. Triquet states that death has sometimes occurred from this cause in the practice of London surgeons. 8. Rupture of the membrana tympani, according to M. Triquet, is liable to be produced when air is pumped into the Eustachian tube by means of Kramer's apparatus; and it may occur even when simple insufflation with an India-rubber bag is employed. Chronic inflammation of the membrane may predispose to this accident. 9. If too frequently repeated, catheterism of the Eustachian tube irritates the mucous membrane, and may give rise to traumatic inflammation. But, sometimes, even the introduction of a small catheter may give rise to a painful inflammation which may extend to the cavity of the tympanum. The general accidents that may follow catheterism of the Eustachian tube are: rigors and fever; facial neuralgia; obstinate headache; and an increase of the deafness, or of the noises in the ears, for the relief of which the operation has been undertaken. Suspension of the treatment is generally sufficient to arrest these accidents.—*Dublin Med. Press*, Aug. 6, 1862, from *Gaz. des Hôp.*

48. *Double Inguinal Hernia on the Same Side.*—Prof. ENGEL states that he has in his practice seen two instances of this rare complication. Both patients were males; and in both the herniæ were on the right side. The internal hernia in each case was greater than the external. The herniæ descended only as far as the middle of the spermatic cord, and lay with their lower broad extremities in close apposition, so that, until the integuments were cut through, there was nothing to denote the presence of a double hernia; the tumour appearing to be an external inguinal hernia. The fascia transversa that covered the internal hernia was very thick, and had a truly aponeurotic appearance.—*Brit. Med. Journal*, Feb. 1, 1862, from *Wiener Medizin. Wochen.*, Oct. 5, 1861.

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49. *What Direction does a Hernial Sac take when Reduced.*—Prof. ENGEL says that, when an external hernia is reduced, there is some trouble in pushing the sac up through the whole extent of the canal. The sac of the internal hernia, on the other hand, can be pushed with much greater facility into the abdomen, and when there does not lie opposite the anterior opening, but glides along the horizontal branch of the pubic bone and forms a peritoneal pouch, which then descends by the side of the bladder. The sac of an external hernia generally remains in the neighbourhood of the posterior opening of the inguinal canal, where it throws the peritoneum into irregular folds: it only rarely forms a peritoneal pouch as in internal inguinal hernia.—*Ibid.*

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50. *Metallic Sutures.*—Mr. W. N. CHIPPERFIELD, Staff Assistant Surgeon, Madras, reports (*Madras Quarterly Journ. Med. Sci.*, July, 1862) very favourably of metallic sutures introduced into use by our ingenious countryman Dr. M. Sims. Mr. C. says, "I will not go so far as to say that ulceration never does take place in the track of a metallic suture, because I have seen a few instances in which it did occur. But it may safely be affirmed that, as a very general rule, there is no irritation set up by metallic sutures and that they may be left until the wound has entirely healed, without any ulceration occurring around them. Those who use these sutures must have had numerous opportunities of remarking the very great advantage which they possess, in this respect, over the non-metallic ones.

"A curious instance occurred in my practice. I used iron wire sutures to close a wound after removal of a tumour from the back. When union was complete I directed the sutures to be removed, and the person to whom the removal was intrusted overlooked one of them. Three months afterwards the patient presented himself to show that he was quite cured, but just as he was leaving the room he remarked, 'sometimes my skin feels irritable, and then, when I rub my back, I feel a sharp point like that of a pin where the wound was.' Drawing my finger along the cicatrix I detected this sharp point and found that it was one extremity of a suture which had not been removed, the rest having, probably, become imbedded in the few granulations which sprung up at some points before union was complete. I drew upon the wire so as to expose the twist, divided and removed the suture; and ascertained that, although it had been there for three months, no irritation, ulceration or suppuration had resulted from its presence.

"When we remember how many surgeons must have had opportunity of noticing the very little irritation, if any, that attends the circuituous course which needles take when they have been accidentally introduced into the body, we can but feel surprise that metallic sutures did not long ago come into surgical use."

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51. *Utility and Superiority of Metallic Sutures.*—M. OLLIER, Surgeon to the Hôtel-Dieu, Lyon, terminates a series of papers with the following conclusions: 1. Metallic sutures are less irritating than those of vegetable or animal origin; they divide the tissues less rapidly, are sooner and longer tolerated, occasion less suppuration in their track, and leave less apparent cicatrices. 2. It is not only on the results of a great number of operations in which we have employed these ligatures that we base our statement of their superiority, but also upon comparative experiments rendered as rigorously exact as possible; the advantages possessed by the metallic sutures of the same size over the organic become

still more striking when the very delicate metallic threads, which we call capillary, are employed. 3. The more delicate the thread is, the less it irritates and divides the tissues, this division being the result of ulceration, and not a mechanical action; in order that this advantage be realized, the flaps must not be submitted to too violent traction, for pressure being then exerted on an excessively narrow line, the thread acts in some sense as a cutting instrument: to prevent this inconvenience, the number of sutures must be multiplied, in order to distribute the resistance over a great number of points. 4. The superiority of the metallic threads consists in the following circumstances: (1), their delicacy, for we may give them the fineness of a hair, and yet preserve sufficient resistance; (2), the constancy of their volume, while organic threads notably increase in this through imbibition of the discharges; (3), the polish of their surfaces and their impenetrability by putrefiable fluids; and (4), the fixity with which they maintain the edges of the wound in contact, while the organic sutures become relaxed and float in their track when ulceration has commenced. 5. Of the various metals from which sutures may be made, iron is the most suitable, by reason of its greater tenacity and the facility with which it may be procured; by covering it with an unoxidizable metal, all the advantages are conferred on iron which appertain to other metals, which it might seem desirable to substitute for it by reason of their resistance to the reaction of organic liquids. 6. For autoplastic operations, iron threads of a greater fineness than have hitherto been employed are very suitable; of the delicacy of a hair, they still possess sufficient resistance to allow of their being manipulated with safety and convenience, while so slight is the irritation which they give rise to (being, so to say, forgotten by the tissues), that they are often tolerated without giving rise to suppuration; they may be multiplied without inconvenience, and they may generally be employed without covering them with gold or tin; when they are intended to remain long within the tissues the iron should be galvanized, but in no case has their oxidation hitherto given rise to any serious inconvenience. 7. Metallic should, then, replace organic threads in all kinds of sutures; when they are fine, they are very easily passed through the tissues, and can be fixed by a greater number of procedures than the organic threads; their removal from amidst the tissues in deep-seated regions (as the vagina, velum of the palate, &c.), is the sole difficulty contingent on their employment, but this inconvenience cannot be considered as counterbalancing their advantages; the capillary threads are the only ones which are supple enough to admit of being easily removed. 8. It is a useful practice to use sutures of different sizes for different parts of the same wound; capillary threads are of great utility as "perfectioning sutures" in autoplasty, when it is our object to obtain a perfectly exact union; for some operations large threads are required, as "sustaining sutures," to bring and keep together the base of the flaps, the edges of which are maintained in contact by capillary threads. 9. Metallic sutures may be left longer within the tissues, and they thus become a precious resource in wounds which, uniting slowly, require that their edges should be kept a long time in contact. 10. They may be advantageously employed as setons in small abscesses of the neck and face, when we wish to avoid producing visible cicatrices. We may also make use of them for the ligature of bloodvessels, and they are especially adapted for the operation for varicocele, allowing of the gradual division of the venous agglomeration by a very simple procedure.—*Brit. and For. Med.-Chir. Review*, Oct. 1862, from *Gaz. Hebdom.*, Nos. 9, 12, 17, 23.

52. *Horsehair as a Substitute for Wire for Sutures.*—Mr. T. Smith, Demonstrator of Anatomy at St. Bartholomew's Hospital, states (*Lancet*, Nov. 8, 1862) that, with a view of finding a material for sutures as unirritating and as unabsorbent as wire, but more easy of adjustment and withdrawal, he performed during last spring a series of experiments on animals to determine the suitability of horsehair as a substitute for wire in certain cases. The horsehair used was such as is ordinarily sold by fishing-tackle makers. The experiments were performed upon dogs. The general results showed that there was no appreciable difference shown by the tissues in their tolerance of silver wire and horsehair. Both ma-

terials were equally unirritant; yet there was a difference in favour of horsehair in the greater facility of its adjustment and subsequent removal.

For the comparison between silk and horsehair as illustrating the relative merits of the two materials for sutures, he refers to the following experiments:—

"June 10th, 1861. Two wounds of equal length, dividing the entire thickness of the integuments, were made on opposite and corresponding parts of a dog's abdomen; four sutures were applied at equal intervals to each, horsehair being used to one wound, and fine ligature silk to the opposite. On the third day both wounds looked alike healthy, and having their edges in close contact. On the fifth day the edges of the wound with silk sutures was slightly reddened, and pouting a little between the points of suture; the opposite wound had united without suppuration. On the eighth day three out of the four silk stitches had cut their way out, and the next day the remaining one came away, leaving the edges of the wound just separated, but granulating healthily. Three days later the wound had almost entirely healed. At this time the opposite wound had healed up soundly around the tracks of the horsehair sutures, which remained *in situ*, exciting no irritation whatever, until the dog's death, a month after the commencement of the experiment.

"May 3d. The opposite femoral arteries of a dog were exposed to the same extent just below Poupart's ligament. Around the vessel on the right lower limb was passed a stout horsehair, and loosely tied; a silk suture being similarly adjusted round the opposite artery. A month after the operation the wound on the right side was all but healed, and was secreting a little serous discharge. At the same time the wound on the left side was swollen, its edges were everted and inflamed, and there was a profuse sanio-purulent discharge. Two days later the wound on the right side had healed around the track of the horsehair seton, which was retained. While around the silk on the other side there was profuse suppuration; the surrounding parts were red, tender, and much swollen; and as the animal's general health was suffering, and it was rapidly emaciating, the silk was withdrawn. The wound now speedily altered its character, and by June 20th was soundly healed. September 3d, four months after its introduction, the horsehair still remained around the right femoral artery, exciting no irritation, the parts being soundly healed around the track of the seton.

"The unirritating nature of horsehair as a material for suture is no less marked when applied to the tissues of the human body. It was used by Mr. Paget in a case of double entropion, the wound of the operation being in one eyelid secured with horsehair sutures, while the opposite was brought together with fine sewing cotton. At the end of a week three out of the four cotton sutures had cut out; while at the same time all four horsehair sutures remained firm.

"As a material for attaching the margins of the skin and mucous membrane after circumcision, or other operations for phymosis, I have found horsehair most useful, having employed it both in children and adults. In one case particularly, where a complete circumcision of the foreskin, with a free division of the mucous membrane was performed on a middle-aged gentleman, its good effect was remarkable. Six sutures were introduced, and excited so little disturbance that the patient was not kept for a single day from his business, which involved pretty active exercise. The wound healed without suppuration, and though left in, at the patient's request, some of them for fourteen days, the sutures caused no irritation, and were removed at last without difficulty. In the removal, the advantage of horsehair sutures over wire is considerable, since, unlike wire, which, after remaining a few days in a wound, stiffens into a metallic ring, horsehair, when cut just aside the knot, either retaining its original elasticity, springs open, or if it has been long soaked in the wound secretions, it becomes soft and pliable. I would recommend the use of this suture for wounds of the eyelid and other parts of the face, and to the loose integuments of the scrotum and penis; since to all these parts I have either applied the suture myself with good effect, or I have seen it used by others at my suggestion.

"But I can imagine that there are other uses to which it might be extended, and especially to facilitate the union of wounds of the conjunctiva. For the purposes of suture, long, white tail hairs are the best. Before being used they should be soaked for a minute or two in water, or they may be drawn once or

twice through the moistened finger-ends. The suture may be fastened off in a double knot, but if the hair is stiff, a third knot is often required. It may be removed in the ordinary manner, seizing the knot with the forceps, and dividing the suture just aside of it. It is scarcely necessary to remark, that horsehair, as a suture, is not suitable for wounds where there is much tension between the edges."

"P. S.—Since writing the above I have been informed that the subject of horsehair sutures has been treated of by Gustav. Simon, but having failed to meet with the publication in question, I am unable to refer to it more particularly."

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53. *Encysted Tumours.*—Dr. Henley Thorp makes (*Dublin Quarterly Jour. of Med. Science*, Feb. 1862) some interesting observations on this subject.

"No surgical subject," he remarks, "possesses greater interest than the pathological history of encysted tumours generally—the large size they are capable of attaining—the deep position they occasionally occupy in the visceral cavities, and their strange and unexpected contents invest these formations with an interest not subordinate to that of any others occurring in the organism. Although the mode of origin of growths such as those produced in the ovaries, amongst the abdominal and pelvic organs, at the bottom of the orbit, &c., cannot be explained upon the principles long ago suggested by Sir A. Cooper, the correctness of the views of this distinguished surgeon, as applied to superficial and subtegumentary wens and cysts, can scarcely be disputed; various circumstances connected with the pathology and symptoms of the tumours last referred to demonstrate their character—they are not new growths, but sebaceous follicles distended into sacs, by reason of imperforate or obstructed excretory orifices, and retained contents. Such swellings are commonly met with in situations where the sebaceous glands are largest and exist in greatest numbers, *e. g.*, on the head, face, and posterior aspect of the trunk; when small, they occupy a position immediately under the skin, or are closely connected with it; on the surface of the tumour, in its early stage, and corresponding with the impervious opening of the duct, a dark point may often be discovered—here a probe can be pushed into the cavity of the follicle, and the contents expressed; its interior is lined with a stratum of epithelium or thin cuticle, and the contents, however heterogeneous, be they limpid as water, viscid as honey, pap-like or fatty, pultaceous or etheromatous, hairs or horns, whether they present under the microscope the appearance of epithelial scales, perfect or disintegrated, fatty particles, crystallized or amorphous or other elements, they are all the secreted products of the internal surface of the cyst, and correspond in every respect with the substances which a tegumentary glandular follicle is capable of furnishing. Facts like these establish beyond all doubt the opinion of Sir A. Cooper as to the follicular origin of encysted tumours, when subcutaneous or superficial. But the fact of such tumours being occasionally congenital—adherent to bone—occupying a position remote from the skin, and separated from it by a layer of muscle, has opposed itself to the unexceptional adoption of the doctrines enunciated in the *Surgical Essays*, and has led to the opinion that certain swellings of this class, although not far removed from the surface, are nevertheless adventitious growths—new formations—differing essentially from the subcutaneous variety. But it does not appear impossible that a body small at first, and connected with the skin, or even developed in its substance, should as it enlarged in size, come to occupy a deeper position, and be detached, in process of time, altogether from its original connections. Let us suppose a cyst, for example, to originate in the skin, covering the orbicularis palpebrarum; it enlarges in size and presses backwards, gradually the fibres of the muscle separate, and the tumour passes through them until the greater portion of its bulk lies upon a plane subjacent; but, the tumour being globular, the action of the muscle must now of necessity tend to place it in a still deeper position, and finally, by reapproximation of its fibres, to close over and separate it altogether from the cutaneous texture; imbedded at length in a loose areolar tissue, in close proximity with the periosteum underneath (which is fixed), and pressed upon in front by the muscular structure of the orbicularis (which is movable), it necessarily con-

tracts adhesion to the former. It is no objection to this explanation to say, that encysted tumours are often congenital—the same causes are in operation during intra-uterine life as exist after birth—the skin is formed at an early period of fœtal development, and the sebiparous glandules are in a state of great perfection and activity at birth—their orifices are probably as liable to become obstructed during gestation as at any other period of existence, nay more so, from anatomical imperfection—if the anus may be congenitally imperforate why should a follicle not suffer from an analogous abnormity?

"In practice, encysted tumours, provided that they have attained a certain size, and have existed for a moderately long period, will always be found underlying the subcutaneous muscles, when these latter present themselves; at least my own experience does not furnish an example to the contrary; and, when a bone lies near, they are very prone to contract an adhesion to it, and indent its surface. No doubt the common wen, when it occupies the higher regions of the head, seldom attaches itself to the pericranium, a fact readily explained by the mobility of the scalp in which it is imbedded, and the intervention of the epicranial aponeurosis, the motions of which it is compelled to follow, but within and about the orbit and frontal region, where no such structure separates the tumour from the fibrous covering of the bone, the two will be found more or less intimately adherent.

"Although the majority of encysted tumours of the orbital region belong to the variety technically called hygroma—thin cysts with watery contents—it is not to be supposed that this locality is not obnoxious to other descriptions of these swellings. The second case detailed in this communication was an example of etheroma, and the sac possessed by no means an inconsiderable degree of strength and thickness. In cases Nos. 3 and 4 the integuments presented quite a natural appearance. In the third case the tumour was not adherent. In one of the patients, the swelling was more globular than oval; and in the girl Macklin the cyst had an irregular outline, and contained, not a fluid, but a suet-like substance, calcareous matter, and hairs. The conclusion, therefore, forced upon me is, that encysted tumours in the neighbourhood of the orbit do not possess *peculiarities*, although they frequently differ in many respects from congenerous swellings of the head and face.

"In all operations which interest surfaces so much exposed to view as the eyelids and parts adjacent, a point of no inconsiderable importance is the avoidance of unsightly scars and cicatrices; all incisions here should, if possible, be parallel to the natural folds and ridges of the skin. I have never found it necessary to deviate from this principle, nor have I ever met with a case requiring a crucial incision; certainly a vertical division of the lid should not be practised if at all avoidable.

"Although in removing the tumour great caution is necessary to avoid an opening, it may be advantageous, on certain occasions, after the cyst has been for the greater part isolated (as when the bone is deeply indented, or the tumour sinks far into the orbital cavity), to permit a portion of the contents to escape through a small puncture, the partial collapse of the sac will diminish its size, and thus permit a more distinct view of its deep-seated attachments. In the first case referred to it would have been perfectly impossible to effect the separation of the tumour from the roof of the orbit, were not this expedient adopted.

"After the operation sutures are indispensable; the edges of the wound, from want of due support, have a great tendency to become inverted; a few interrupted stitches made with a slender sewing-needle and fine waxed thread, with strips of court-plaster at intervals, supported by a well-adjusted compress, offer the best means of insuring an accurate union; as for metallic ligatures, I have almost renounced them, and I am not ashamed to confess the heresy.

"In cases where the total extirpation of the tumour is impossible, from its deep position or intimate connection with important organs, a secondary growth is very liable, in process of time, to make its appearance. The tumour is said to 'grow again;' but this language is inaccurate: no doubt a swelling does grow, but it is an *adventitious one*, engrafted upon the remnant of the former cyst, which, continuing to perform its function as a secreting surface, furnishes an unorganized product that acts as a foreign body, round which the cellular tissue

solidifies into a sac. It is thus relapses occur, and hence the advantage of being able to remove every portion of the tumour. When seated in the orbit, if deeply rooted, a cystic growth is one of very serious import, and may easily be confounded with other causes of exophthalmos;[1] nor is laying open the sac, and exciting a suppurative action unattended with danger. We must recollect that the periosteum of the orbit is continuous with the dura mater; and further, that a delicate sheath of the subarachnoid cellular tissue is continued forward around the bloodvessels and nerves that enter posteriorly; moreover, that the ophthalmic is in communication with the cerebral veins through the cavernous and other sinuses. Inflammation may readily extend by any of these routes from the orbital cavity to the brain and its membranes; nor is this occurrence by any means rare. Mackenzie, Wardrop, and other ophthalmic surgeons give cases. When I read of encysted tumours frequently operated upon, both in London and Dublin, before a radical cure could be effected, I may be permitted to congratulate myself at being more fortunate with my cases."

54. *Fibrous Tumours of the Iliac Fossa.*—In some clinical remarks on a case under his care, in the Hôpital des Cliniques, M. Nélaton took occasion to describe a form of tumour, of which he has met with fifteen or twenty instances in the course of his practice. In structure, these tumours are composed of tissue resembling that which constitutes fibrous tumours of the uterus; their constant point of attachment or origin is the crest of the ilium, near the antero-superior spine of the bone. They are developed in the subperitoneal cellular tissue, behind the inguinal canal, between the iliac fascia and the peritoneum. M. Nélaton has found these tumours in females only; and all the patients in whom he has found them had borne children. They may be connected, to some extent, with the congestion which so frequently occurs at the menstrual periods and during pregnancy. The progress of these tumours is generally very slow; they take from four to ten years in gaining the size of two fists. The largest which M. Nélaton has seen, was of the size of a fœtus at full term.

The fibrous tumours may be confounded with enchondromatous tumours, or with intestinal enlargements from impacted feces. But enchondroma is very hard knobbed; while the fibrous tumour is smooth, and is not attended by disorder of the intestines. Again, the fibrous tumours may be confounded with swellings, resulting from glandular degeneration or hypertrophy, with fibrous tumours of the uterus projecting into one of the iliac fossæ, or with tumours of syphilitic origin. Tumours of the latter kind, appearing among tertiary symptoms, have a certain amount of resemblance to the fibrous tumours of the iliac fossa. But the integument covering them is generally slightly changed in colour, and the subcutaneous tissue is found, on pressure for about a minute, to be a little œdematous; while nothing of the kind is observed in the fibrous tumours. Glandular swellings have not the firmness which characterizes the fibrous tumours; they are somewhat resistent to the touch, and sometimes manifest obscure fluctuation; and (a valuable point in diagnosis) they are scarcely ever solitary, while the fibrous tumours of the iliac fossa are always so. Moreover, glandular swellings are situated at the level of the inguino-crural fold, rarely in the iliac fossa; and they are movable in every direction. Fibrous tumours of the uterus are distinguished by being readily moved through the abdominal walls and the vagina; while the fibrous tumours on the ilium remain fixed when palpation is attempted.

With regard to treatment, M. Nélaton advises that, if the tumour be small, and do not cause much pain or inconvenience, the surgeon should not be in a hurry to interfere with it. But if it become painful and grow rapidly, or if the patient insist strongly on its removal, an operation must be performed. M.

[1] Several years ago a case of exophthalmos was admitted into the City of Dublin Hospital, under the care of Dr. Jacob. The eyeball was greatly protruded, the cornea dull, and the lids congested and of a purplish colour. It was decided to extirpate the globe, and afterwards to remove the contents of the orbit, if necessary. The first incision at the outer canthus opened a cyst, which immediately emptied itself, and permitted the eye to resume its usual position.

Nélaton has operated in two instances. In one case, M. Michou, under whose care the patient was, believed the disease to be encephaloid; M. Nélaton, however, recommended its removal, to which M. Michou consented. The peritoneum was strongly adherent to the tumour, and a small hole was torn in it, which, however, was closed by a portion of epiploon. The large vessels in the iliac region were exposed, but none were wounded. The pedicle of the tumour was cut from the crest of the ilium by scissors. M. Nélaton saw the patient lately (four or five years after the operation), and she remained perfectly well. The second case was more simple: in it a tumour, rather larger than the head of a fœtus at full term, was removed through an incision of the same kind as that made for ligature of the external iliac artery. The patient recovered, and there has been no relapse.—*Brit. Med. Journ.*, March 29, 1862, from *Gaz. des Hôpitaux*, Feb. 18, 1862.

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55. *Necrosis.*—Mr. THOS. WORMALD, Surgeon to St. Bartholomew's Hospital, presents (*Lancet*, Oct. 25, 1862) some interesting remarks on this subject.

"When a portion of bone dies," he observes, "the means by which nature gets rid of it has been a subject of controversy, and hitherto I think the truth has not appeared.

"The late Mr. Bransby Cooper, in his Lectures, has shown that where there is dead bone the 'necrotic' pus discharged contains much phosphate of lime; in ordinary pus there is scarcely a trace to be found.

"From observations and experiments I have long concluded that it must be through chemical agencies the disintegration of dead bone is accomplished.

"In necrosis pus is secreted abundantly, and it is alkaline. Presently acid is produced, which is at first weak, but it becomes stronger, and in some cases it may be seen exuding through minute apertures, which gradually enlarge until they are quite visible, and the surface of the dead bone becomes rough.

"In necrosis, by the use of common litmus paper an acid may be detected. Mr. Attfield, demonstrator of practical chemistry at St. Bartholomew's Hospital, found the acid taken from the surface of a dead bone to be phosphoric; this dissolves the bone, and the air-bubbles resulting may be seen on the surface of the pus.

"It may be further observed that in doubtful cases of necrosis the presence of phosphoric acid may prove a valuable diagnosis; and in cases where dead bone cannot be removed by operation Nature seems to indicate an appropriate remedy."

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56. *Ovariotomy.*—[Dr. ROBERT LEE read a paper recently (Nov. 11, 1862) on this subject, before the Royal Medical and Chirurgical Society, which gave rise to an animated discussion. As the subject is one of great interest, and the debate shows the opinions of the leading surgeons of London in regard to the operation, we give it in full, though we must say that we do not see that much new light is shed upon the question. The discussion seems to us not to have been conducted in a true philosophical spirit, but the advocates for the operation and its opponents each have engaged in it as partisans; the former greatly overvaluing, and the latter underrating, its results. The great question—the means of diagnosing the cases suitable for an operation—has not been elucidated; and, until that is done, the operation must be regarded with some distrust. We learn from reliable authority, that one of our most experienced ovariotomists operated a few months since upon a lady whom he pronounced to have ovarian disease, and that the diagnosis was as clear and certain as in any case he had ever examined; yet, when the operation was performed, the disease proved to be a fibrous tumour of the uterus; and it was not until after the tumour had been excised and carefully examined that the mistake was discovered.]

Dr. LEE briefly states that his experience during the last eleven years, in regard to ovarian disease, convinces him that the published records of ovariotomy do not truthfully represent the statistics of the operation; successful cases having been made known, and the unsuccessful ones kept in the background. In none of the cases which have occurred under his own eye has he thought it

right to recommend the operation; and he considers the slow progress made by many of the cases to have been a justification of the course pursued by him.

The PRESIDENT said that, fifteen years ago, he saw Mr. Walne perform ovariotomy, in a woman 29 years of age. He made the large incision. The patient recovered, and was well now.

Dr. TYLER SMITH said that, for twenty years, he had, as Dr. Robert Lee still did, recommended that cases of ovarian dropsy should either be let alone, or be treated by palliative means, as tapping, etc. He then conscientiously believed that he was doing more good by these palliative measures than by ovariotomy. He saw, however, much misery and many miserable deaths from this disease. One case, especially, led him to consider ovariotomy in a more favourable light. Three years ago, he saw a case of Dr. Lee's which he considered favourable for ovariotomy. Dr. Lee thought him a madman for entertaining such an idea. The sudden death of this patient made him resolve, in the next favourable case, to try ovariotomy. He had since done the operation in fourteen cases. He had not rejected a single case. As regards diagnosis, of which the author had spoken in his paper, he would add, that in some of these cases Dr. Lee's diagnosis had been wrong. No one could be infallible in diagnosis, but, for the last three years, he had made but one mistake. With this exception, all the cases operated on were ovarian. In this case, which was one of cancerous disease of the mesentery, he had been unable to complete the operation, and the patient died in twenty-four hours. The patient was, at the time of the operation, then in danger of death. Of the fourteen cases, three had died, and—except one, done on Friday week, which was going on well—all the others were now well. So that of fourteen cases, three were dead, eleven cured, and there was one mistake. He would ask the author if he had had equally good results from his do-nothing practice. If so, his results were different to those he (Dr. Tyler Smith) had obtained before he adopted ovariotomy. He hoped that, some time, the whole statistics of ovariotomy would be published. He thought that the operation was safer, easier, and less dangerous than it was believed to be; and that the chief danger arose from medical men like Dr. Lee, whose recommendation induced the patient to put it off. He (Dr. Tyler Smith) thought, however, that we should not operate until the patient's health had begun to fail; but, in some cases, the patient insisted on the operation. We have to deal with minds as well as with bodies, and patients often will not endure a life of uncertainty. In conclusion, he would add that Dr. Lee had not brought forward anything against the operation, and that the hundreds of women saved by ovariotomy would have a stronger influence than his mere dictum. Two of the cases on which he had operated had been patients of Dr. Lee, who strenuously opposed the operation.

In reply to Dr. Beaman, Dr. TYLER SMITH said that the two patients of Dr. Lee, referred to in his concluding remarks, recovered.

Mr. SPENCER WELLS regretted that the substance of the documents accompanying Dr. Lee's paper had not been made known to the meeting, because the portion of the paper which had been read contained neither facts nor arguments, and all that any one could do, by way of reply, was to endeavour to prove that Dr. Lee's objections to ovariotomy should not lead to the condemnation of the operation. Three principal objections were stated by Dr. Lee. He said that women suffering from ovarian disease may live for a long time under palliative treatment; secondly, that it is often impossible to determine whether a tumour be really ovarian, and, if so, whether it can be removed; and, lastly, that ovariotomy is a much more dangerous operation than published statistics would lead us to believe. In reply to the first of these objections, it would be admitted by every one who had followed a case of ovarian disease to its natural or ordinary termination, that it was difficult to imagine a life of more hopeless misery; and that nothing could be more painful than to watch, day by day, a poor creature who, for some reason, was beyond the aid of surgery, sinking into her grave, worn out by protracted suffering. Yet this was the fate to which Dr. Lee would condemn hundreds of poor women who might be restored to perfect health by ovariotomy. Then as to the alleged difficulty of diagnosis, and the distressing mistakes which had been recorded, it must be acknowledged that these mistakes

were errors of a bygone age. It would be almost impossible for any one acquainted with the ordinary practice of percussion to repeat the error of the earliest Scotch ovariotomist, and open the abdomen of a woman whose only tumour was formed by flatulent distension of the intestines. Nor could any one who had ever heard the placental murmur, or the sounds of the fœtal heart, repeat mistakes which had been made in the later stages of pregnancy. In the earlier periods of pregnancy, doubts would sometimes arise; and in cases where ovarian disease complicated pregnancy, an occasional error might be unavoidable; but, in the great majority of cases, the diagnosis of ovarian disease might be brought as near to a positive certainty as could reasonably be hoped for in any department of surgery. From his (Mr. Wells's) own experience of forty-six cases in which he had performed ovariotomy, of six others in which he had commenced the operation, or had made an exploratory incision, and of very many in which he had either simply tapped, or had injected iodine, he should say that the diagnosis was generally easy; and though, in some rare cases, it was not so, yet no important mistake had been made in any one of these cases. This alone was enough to prove that any supposed difficulty in diagnosis could not be maintained as an objection to ovariotomy; and the only logical conclusion which could be drawn from the mistakes due to the gross ignorance or gross carelessness of some surgeons, or from the very rare errors which might be unavoidable to the most careful and the best instructed, was not the condemnation of a useful operation, but the endeavour so to improve our means of diagnosis as to make errors less and less excusable. In no other department of surgery would the possibility of an occasional mistake lead to the abandonment of all surgical interference, and it would be quite as logical to decry lithotomy because a neither careless nor incompetent surgeon might possibly cut into a bladder which did not contain a stone; or to condemn the ligature of arteries, because some one had tied an artery to cure an aneurism which did not exist; or to raise an outcry against the excision of joints, because a joint had been cut out which appeared to be so little diseased that a few weeks' rest would have saved the limb —as to denounce ovariotomy because some surgeons who had performed it had made mistakes. Then, as to the mortality—undoubtedly it was high; but it was high because we are often driven to operate in cases where the patient has been so broken down by the disease that the hope of success is very faint. If only favourable cases were operated on, a very large proportion would recover. We were now gaining the knowledge which enabled us to say to a patient, "The chances are ten to one, or five to one, or two to one, against you; or, the chances of success and failure are about equal; or, they are two to one, or five to one, or ten to one in your favour." Out of his (Mr. Wells's) own 46 cases, 17 had died and 29 had recovered, but many of them were very desperate cases; and he could say that he had scarcely ever lost a patient when he had felt very confident of success before the operation. Ten out of the last eleven cases had recovered. But it is said that the mortality is greater than the profession believe, because unsuccessful cases are concealed. This might be said of every other surgical operation. Men take pride and pleasure in their successes, and remember them, and make them known; while their reverses have often been so painful that they try to forget them. At any rate, they do not publish them, unless, for some special reason, they feel bound to do so. So in estimating the mortality of every operation—lithotomy, amputations, herniotomy, and so on—it is always necessary to make some allowance for probable error, due to the non-publication of unsuccessful cases; but, with regard to ovariotomy, so much attention had been directed towards it, that we probably had a larger proportion of cases published, compared to the number of operations performed, than could be collected respecting any other operation. He (Mr. Wells) *knew* that none of his own cases had been kept back; he fully believed that many other operators had been equally truthful; and he would join most warmly with Dr. Lee in denouncing the conduct of any man who could bring forward his successful cases and keep his fatal cases wholly or partly concealed. No punishment could be too severe for such flagrant dishonesty. But it was a libel on the profession to suppose that such an offence was common enough to throw discredit upon an operation which had done honour to English surgery. The Jury

on Surgical Instruments in the International Exhibition have published their report—and a most able report it is; just what one would expect from the eminent men who compose the jury—and among "the most remarkable additions to general surgery since 1851, which receive illustration in the present exhibition," the jury thus speak of ovariotomy: "Described by De Haen as an operation of which it would not do to talk, lest some reckless surgeon should attempt its performance; and by Scanzoni as a proof of madness in the patient who should adopt, and of crime in the surgeon who should abet, such a mode of suicide; and, again, energetically denounced by Velpeau as an operation on no account to be admitted into French surgery—it is a source of legitimate satisfaction to English surgeons, from William Hunter downwards, that, thanks to their perception of the conditions necessary to success, and their courageous self-reliance in the face of difficulty, an operation which, till lately, was considered scarcely admissible, should now be practised with results at least as favourable as attend many other capital operations." This "source of legitimate satisfaction to English surgeons," Dr. Lee would deny them; but it was to be hoped that the Society, so far from aiding him, would, on the contrary, influence professional opinion in favour of an operation which should rank among the greatest benefits conferred by surgery upon mankind.

Dr. Savage said that, as senior physician of the Samaritan Hospital, he had seen nearly all the cases operated upon, in that institution, by Mr. Spencer Wells, and, like Dr. Lee, had also got together a list of cases of ovariotomy; but his collection differed from Dr. Lee's in one important point. Dr. Lee never would see the operation done. He (Dr. Savage) had asked him to come and see a case, but Dr. Lee said he would rather not. This reminded him of an anatomist who denied the existence of the curling arteries of the uterus. Many years ago, when Dr. Savage was giving some attention to this point, he one day asked this gentleman to come and see these arteries in a uterine perforation, but he said, "No; he had said there were no such arteries, and he did not want to see them." Dr. Lee stood precisely in this same position. He had expressed strong opinions against ovariotomy, and he did "not want" to see anything which could alter his opinions. So his list of cases of ovariotomy, though large, was perhaps less reliable than his (Dr. Savage's), though only numbering between fifty and sixty, because he (Dr. Savage) had taken care to become intimately acquainted with each case before the operation, during the operation, and after the operation. Thus, his personal information being more precise, might, perhaps, be accepted as making up for deficiency in numbers so far as to justify his offering a few remarks on the present question. When Mr. Spencer Wells became his colleague at the Samaritan Hospital, the authorities there, himself included, on the whole, were unfavourable to ovariotomy; but Mr. Wells's success was decisive. Like Dr. Smith, he (Dr. Savage) could not help becoming a convert, but he could not agree in considering the extirpation of a diseased overy a simple operation; quite the contrary. It seemed to him there was no operation which could present a greater source of embarrassment, or required more presence of mind, readiness in resource, and the other best qualities of the surgeon. The reasons just advanced by Dr. Smith and Mr. Spencer Wells, in favour of ovariotomy, must be concurred in soon r or later, especially by those who had been in the melancholy situation of witnessing the progress and termination even of ordinary forms of ovarian disease. It had been noticed that the operation had been followed by an inequality of success, in regard to persons and places, which had excited a doubt, not only whether it could ever be brought under definite surgical rules, but whether individual statements of successful cases could be relied on. From his own observation, he could not help thinking that very much depended, not so much on the skill, as on the experience, of the operator. For instance, what course would an inexperienced operator adopt in a case where, the tumour having been freed from the abdominal cavity in the most skilful manner, everything promising its speedy and successful separation, he could not find a pedicle—no place to apply any form of ligature? Would any one, without some experience in such operations, be ready with a suitable expedient for such a complication? Yet he had lately been present when this occurred to Mr. Wells, and the measures resorted to were followed by one of the best reco-

veries. One of Dr. Lee's chief objections turned on the presumed insuperable difficulty of making out satisfactorily, in any given case, whether or not the tumour was a pregnant uterus, or whether pregnancy coexisted. This difficulty had not led to any mistake in any of the cases he had seen, nor could he imagine how it need be made. Fluctuation in many compound cysts was avowedly very obscure, and the abdomen, to the sight and touch, often closely resembled its appearance in pregnancy, but the usual modes of investigation were quite sufficient to make out a correct diagnosis in every case. He had come to this meeting of the Society in the anticipation of hearing sundry other points of difficulty connected with ovarian diagnosis discussed; but as what had transpired of Dr. Lee's communication offered no precise fact of any kind whatever, there was nothing to deal with. Dr. Lee had included in his list all the cases of ovariotomy he could get at. Well, then, the case he was about to allude to must be one of them, and, therefore, before the Society, and he thought it would be satisfactory to the profession if they were informed what were the precise points which led to the difficulty of diagnosis in a case which had occurred in the institution with which Dr. Lee was connected as physician accoucheur. The leading particulars of the case had been published, but he (Dr. Savage) thought Dr. Lee ought to explain, for their future guidance, how and why the difficulty had arisen.

Dr. LEE rose and said it was true that he had never performed the operation of ovariotomy on the living body, that he had never sanctioned its performance, and that he had never seen it performed by others. In the year 1840, he had been invited by the late Mr. B. Phillips to be present at the St. Marylebone Infirmary to see him operate. He (Dr. Lee) consented to be present, but, being professionally engaged, did not arrive at the infirmary till the operation had been completed. The patient was 21 years of age, in good general health. An incision of two inches and a half was made through the abdominal parietes; the cyst was seized with the vulsellum; 330 ounces of fluid evacuated; the opening enlarged; the cyst drawn out; the root tied and excised, and the sac removed without difficulty. Severe pain followed, with vomiting. He saw the patient about half an hour afterwards, with rapid, feeble pulse, and cold extremities. He was present at the examination of the body, when the appearances of recent inflammation were observed within the pelvis, with a small quantity of extravasated blood. He had seen the patient a few days before in excellent general health, and if her life had not thus been suddenly and violently destroyed, she might have lived for years. Mr. B. Phillips never again performed the operation of ovariotomy. He (Dr. Lee) was now told that ovariotomy was a simple operation, and the reports published of successful cases would lead to the inference that it was attended with comparatively little danger. No operation, he was convinced, could be performed on the human body so dangerous, except the Cæsarean section. Indeed, the Cæsarean section and ovariotomy resembled one another in several striking respects. In both an incision must be made through the abdominal parietes, the peritoneal cavity laid open, and the bowels exposed. "I am acquainted," says a statistical writer in the thirty-fourth volume of the *Medico-Chirurgical Transactions*, "with 409 authentic cases of the Cæsarean section, 341 of which are collected in Kayser's valuable essay, 'De Eventu Sectionis Cæsareæ.' In 251 of these cases the mother died; in 156 she survived. There can, however, be no doubt but that these figures convey a very exaggerated impression as to the proportion of recoveries, and that the unfavourable estimate of English authors is nearer the truth. Both Kayser and Naëgelé regard the results given by the published cases as *unfair;* and the former mentions the fact, which of itself affords strong evidence on this point, that while the total maternal mortality amongst the cases which he had collected was 63 per cent., the mortality of cases occurring in lying-in hospitals, in which institutions failures must of necessity be reported as well as successes, amounted to 79 per cent." The results here stated were admitted to be unfair, he would say wholly destitute of truth, and utterly unworthy of credit. Did any one person there present believe that of these 409 cases the mortality was not greater than 63 per cent.? It was known that numerous fatal cases of Cæsarean section had occurred on the continent, of which no report had ever been permitted to see the light. This applied forcibly to the statistics of ovariotomy, which he had

been told were the sole foundation upon which all their conclusions respecting the propriety of removing ovarian cysts and tumours must rest. If all the fatal cases of ovariotomy had been published, there might have been some appearance of force in this; at least, the degree of danger would have been indicated. But this had not been the course followed in this country since the operation came to be performed. It was notorious that numerous fatal cases of ovariotomy had occurred of which no report had ever been published, and all attempts to remove the veil which concealed them had been fruitless. "You have related, sir, to the Society (addressing the president) a successful case of ovariotomy performed many years ago by Mr. Walne. Can you inform the Society of the number of cases in which he performed the operation with disastrous results, of which no account was ever published?" When preparing his (Dr. Lee's) analysis of 162 cases which had occurred in Great Britain, for this Society, he wrote to Mr. Walne, and requested him, on the grounds of science and humanity, to communicate a full report of all his successful and all his fatal cases. With this request Mr. Walne refused to comply in the most peremptory manner, and no accurate report had ever been published of the results of his practice. It was long since Mr. Walne had been heard of as an ovariotomist; but the reports of success in his early career were quite as flattering as those marvellous results which had been related to the Society that evening. Mr. Walne was not the only ovariotomist to whom he (Dr. Lee) applied for information on the occasion without success. Another, whose fame as a successful ovariotomist had not been surpassed in this country, made a return to him which was not correct, and which he was compelled to reject as untruthful. Of this ovariotomist little had been heard of late years, and he (Dr. Lee) believed he had abandoned the operation altogether. The postscript of Dr. Lee's paper contained an account of all the cases operated upon by Mr. Lane, Dr. Clay, Mr. Spencer Wells, and others, and the history of some fatal unpublished cases. The Council of the Society had decided that these should not be read. He had requested the last case in his postscript to be read, but that request had not been complied with. It was a case related in a letter to Dr. Noble. The operation was performed in 1855, with the sanction of Mr. Harrison's colleagues, and in the presence of Dr. Noble and several other medical men and Dr. Clay. "I removed the tumour," says Mr. Harrison, "and the first time I suspected it to be uterine was on cutting through the pedicle." The patient had died in eight hours. He (Dr. Lee) was uncertain if this case was published. Another letter in the postscript contained an account of three fatal cases. One of these had been published as a fortunate case. The histories of many others had been communicated to him, not referred to in the postscript. He had himself seen a considerable number of cases where the operation was performed, contrary to his advice, with rapidly fatal results, of which no reports had been published by which the cases could be recognized. He passed the house of one of those patients that afternoon. There was hope in this case that, with ordinary treatment, this patient might have lived for years. The operation was very lately performed, with rapidly fatal results, upon a lady he had seen in the country on the sea-coast. By no efforts had he succeeded in bringing to light the details of that case. If the operation was so simple and so successful, why were these cases concealed from the public and the profession. He (Dr. Lee) saw a case near Brixton some time ago, since the publication of his "Analysis." There was a great mass of ovarian cysts and tumours firmly adhering. He never saw a more unfavourable case for an operation; but a most marvellously successful ovariotomist was called to see the patient, and he pronounced it a favourable case. He said that he (Dr. Lee) was wholly ignorant of the subject. This ovariotomist made an incision from stem to stern, not an exploratory incision, but nothing could be removed after repeated attempts, and the patient was soon in her grave. Dr. Lee wrote to the ordinary medical attendant some weeks after, inquiring what had become of her. He received no reply of any kind. He wrote a second time, without success. Many months after, Dr. Lee accidentally met a clergyman at Clapham, who informed him that the operation had been performed with speedily fatal results, and that he had buried her. It would be useless to multiply such cases; and yet he was told that the statistics of ovariotomy were to form the ground-

work of all decisions respecting ovariotomy, and that they were worthy of trust. An attempt had been made to institute a comparison between the results of ovariotomy and great surgical operations. A chronic ovarian disease, after lasting four years, and not threatening life, bore no resemblance to a case of strangulated hernia, an aneurism ready to burst, or a shattered limb with hemorrhage from the large arteries. Ovariotomy could not be compared to any of the great operations of surgery. In the cases of ovariotomy called unsuccessful, the patients had been suddenly deprived of life by violence without any necessity. But it was not from some occasional cases of recovery from the operation, such as those related that evening, that a correct opinion of ovariotomy could be formed. All the facts must be taken into account, otherwise no sound judgment could be formed of the difficulty of the diagnosis, and the danger of the operation. It appeared, from the analysis of 162 cases, that a successful instance occurred in America, and was published in the *Edinburgh Medical and Surgical Journal* in 1822. He had thought that this was the first case; but it was now stated that the operation had been performed by Dr. M'Dougal before. This was a matter of no importance. It could not be denied that the publication of a successful case took place in 1822; and he had supposed Mr. Lizars, in consequence of this case, had recourse to operation. In Mr. Lizars's first case, there was no ovarian disease to be removed. In the second, the disease was removed, but the other ovary was diseased and could not be removed. This patient was afterwards seen by some surgeons in London. He believed Mr. Lawrence saw her, with a great cicatrix of the abdomen, and a large mass of disease within. The third patient operated upon by Mr. Lizars died. In the fourth case, there was no ovarian disease to be removed. About 1829, a case similar to this was seen in Guy's Hospital by Dr. Gooch. In 1826, Dr. Granville made an incision of nine inches long through the abdominal parietes, and a large ovarian tumour was brought into view, which had such extensive adhesions that it could not be removed. In 1829, Dr. Granville operated again, and removed a tumour weighing nine pounds, which was supposed to be ovarian, but it was a large fibrous tumour of the uterus. Dr. Lee examined this tumour in the recent state, and ascertained that it had adhered to the fundus uteri by a thick peduncle, around which a ligature had been applied, and the root cut across. A portion of small intestine which had come in contact with the incised root became inflamed and gangrenous, and the patient soon perished miserably. The preparation of the parts was long in the possession of Mr. North. Dr. Granville was about to operate upon another patient, but Mr. C. Clarke recommended the patient not to submit to the operation, and she lived some years after, and died a natural death at Barnes. Dr. Scott examined the body, and presented the tumour to Dr. Lee, which was the uterus, with a fibrous tumour imbedded in its walls of the size of three human heads; it was in Dr. Lee's collection at St. George's Hospital. Dr. Granville had far greater experience in the practice of midwifery than any who had that evening spoken. In 1835, Mr. Jeaffreson performed the operation, and the patient recovered. From that time to the present, the operation had occasionally been performed with success, but as often, he (Dr. Lee) believed, with fatal results, if the whole truth were revealed. About the same time, Mr. King attempted to perform the operation, but the ovarian disease could not be removed, and the patient died. In 1834 he repeated the operation with success, and again in 1836. Then followed three successful cases and one fatal. Then followed six fatal cases running, in which the operation was performed by Messrs. Hargraves, B. Phillips, Aston Key, B. Cooper, and Mr. Greenhow. In looking over one column of his "Analysis," he (Dr. Lee) could see "Died—died—died—died—died—died" in a few days—he might say killed. All these operations were performed by distinguished surgeons, and none of them repeated the operation. In fact, the operation required undoubtedly great hardihood. So far, it was an operation such as had been described. He would refer those who wished to know all the facts to the remainder of the "Analysis," by which it appeared that, of 162 authentic cases in which the operation had been undertaken, in 60 the ovarian disease could not be removed, 19 of which proved fatal; of the remaining 102 cases in which the operation was completed, 42 terminated fatally. From these facts, he concluded

that ovariotomy and the Cæsarean section were the two most dangerous operations which could be performed on the human body. The postscript of his (Dr. Lee's) paper, which the council had refused to read, contained reports of all the cases, successful and fatal, which had come under the care of Mr. Spencer Wells, and he believed that that gentleman had concealed no fatal case. One of the successful cases, he (Dr. Lee) had seen in Burton ward, St. George's Hospital, and he thought the case as favourable for the operation as any he had ever seen. He summoned a consultation of the surgeons; but they declined to operate unless he sanctioned the operation, which he could not do, knowing that, until the abdomen was laid open, it was impossible to tell whether the cyst could be removed or not, and knowing also that the patient's life would, under the most favourable circumstances, be exposed to the utmost danger. She went to the Samaritan Hospital, and was operated upon by Mr. Spencer Wells with success; but she had a narrow escape with her life, and she told him (Dr. Lee) that she considered herself on the brink of the grave during several days. But the perusal of the successful cases of Mr. Spencer Wells had no doubt led to most fatal results. In reading some of these cases, a lady in Ireland, who had ovarian disease, resolved to have it extirpated, being convinced that ovariotomy was not attended with much danger. A pecuniary negotiation took place between her and Mr. Wells, but it came to nothing; and another ovariotomist went to Ireland, and performed the operation. He (Dr. Lee) had been informed that he represented the case as not unfavourable, and that his fee was to be 300 guineas, and 100 guineas every day he remained with the patient after the operation. Bargains of this description, he (Dr. Lee) had been informed, were not uncommon. The operation was easily performed, and the operator ran round the table, kicking up his heels in triumph; but these feelings of delight were of short duration, for the patient soon began to sink, and died in eighteen hours. Had Mr. Spencer Wells ever read any report of this case? It was impossible to deny that the question now under discussion was a money question, and not one of science and humanity. Mr. Spencer Wells had reduced all his cases under three heads. One of these comprehended all the cases in which what had been called exploratory incisions had been made, and these were spoken of as if they were things of no very serious importance, though they had sometimes caused death. "You would not, I am convinced," concluded Dr. Lee, "view them in this light if incisions were made through your abdominal parietes, and the fingers of an ovariotomist introduced amongst your bowels to hunt for adhesions. Mr. Liston had a great horror of such exploratory incisions and of all ovariotomists. He called them 'belly rippers,' with a B before and a B after. The meaning of these two B's I must not state plainly to the Society."—*Med. Times and Gaz.*, Nov. 22, 1862.

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57. *Ovariotomy in Ireland.*—Dr. Kidd exhibited to the Dublin Pathological Society (April 12, 1862) an ovarian cyst which he had removed and gave a history of the case, which terminated fatally. He stated that this was only the third time the operation had ever been performed in Ireland. The first was in a case of his in which Dr. Clay of Manchester, had operated, in which there were no adhesions, and the patient died within 23 hours. The second was Dr. Gordon's case, in which there were adhesions to a slight extent, and which was also fatal.—*Dublin Quarterly Journ. Med. Sci.*, Nov. 1862.

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58. *Ovarian Dropsy cured by Iodine Injections.*—The following communication from Dr. Bullen, of Cork, was read to the Edinburgh Obstetrical Society:—

"Last year, in a case of ovarian dropsy, after drawing off several gallons of glairy fluid, I threw two drachms of compound tincture of iodine in an ounce of water into the ovarian sac. The woman complained of great heat in the part, but the symptoms were not severe. She left the Mercy Hospital much relieved, with a hard tumour in the iliac fossa. At the end of six months this woman died of phthisis, and on dissection the ovary was found converted into a solid tubercular tumour about the size of a goose's egg. There was not more than half an ounce of muco-purulent fluid in the sac."

Dr. A. Simpson stated that he had, a few days ago, assisted his uncle in tap-

ping a woman for ovarian dropsy, and, before injecting iodine, he washed the sac out twice with about twelve ounces of tepid water, for the purpose of removing the albuminous fluid which remained adherent to the walls and would have prevented the iodine from acting so actively as it would otherwise do.

Dr. Andrew Inglis alluded to a woman at present in the Royal Infirmary affected with peritonitis, whom Dr. Simpson had tapped and injected some years ago for ovarian dropsy, and in whom the disease never recurred. The only vestige remaining was a small, hard tumour, the size of an orange, on the lower part of the abdomen on the left side.—*Edinburgh Med. Journal*, Oct. 1862.

OPHTHALMOLOGY.

59. *Inferior Section of Cornea for Extraction of Cataract.*—Mr. ERNEST HART considers the inferior section of the cornea preferable to the superior, in the operation of extraction of cataract. My own experience, he says (*Lancet*, Oct. 18, 1862), and the observation of a long series of cases in the practice of my friend, Mr. White Cooper, prompt me to speak much more favourably of the inferior section than do some of our classical writers on ophthalmic surgery. From the results of a large number of cases of extraction, in rather more than half of which I have operated by the inferior section, I have great reason to be satisfied with that method. In a number of other cases which I have had opportunities of observing, the result has been as good.

It has been objected to the inferior section that the edge of the lower lid is likely to become engaged in the wound, and so to retard union; and that by its position, being bathed in the tears of the inferior cul-de-sac of the mucous membrane, the healing of the cicatrix must suffer from that contact. I believe both these objections to be partly fanciful, and that they are not fully borne out in practice. I have never seen more rapid union than in the cases of inferior section, and the excellence of the ultimate result is greatly aided by the more favourable conditions which it offers for executing the operation to perfection. In employing the superior section, there are difficulties inherent to that method. These occur especially in the second and third stages of the operation. After the section has been made and the eye released, the ball turns upward under the lid so as to bury the incision, and the introduction of the cystitome, the expulsion of the lens, and the perfect clearing of the pupil are all infinitely more difficult than in the lower section. Practice teaches how to overcome these difficulties; but I am persuaded that the greater facility with which the pupil may be cleared and the parts adjusted has the effect of producing more perfect results from that operation. The accidents of operation—and in these I include wounding the iris, effusion of blood into the anterior chamber, difficulty in extracting the crystalline lens, incomplete incision of the capsule, declension of the lens into the vitreous humour—may be almost wholly excluded from operation by the inferior section. By my own experience I am led to similar conclusions in respect to prolapse of the iris and synechia—two of the most troublesome accidents so far as the after-consequences are concerned. In one or two patients I have operated with the same degree of care by the inferior section on the one eye and by the superior section on the other, and the result has confirmed a preference for the former method. Thus, in Catharine B., who was lately under operation at the West London Hospital, the result on the left eye (inferior keratotomy) was perfect; in the right (superior keratotomy) the iris is adherent to the corneal cicatrix. The same has happened in two other of my cases lately. I know no more beautiful, simple, and successful operation than extraction by the lower flap.

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60. *Some Affections of Vision Apparently of Syphilitic Origin.*—Dr. R. HIBBERT TAYLOR, Senior Surgeon to the Liverpool Eye and Ear Infirmary, has published (*British Med. Jour.*, March 29, 1862) some interesting observations on these affections.

"Any one who has seen much of diseases of the eye," he remarks, "especially as they present themselves in public institutions for that class of maladies, must have had his attention drawn occasionally to cases apparently of syphilitic origin, in which the failure of vision could not be accounted for by any appreciable change in the external structures of the eyeball. There is probably no redness of the superficial tissue present, nor any trace of iritis, as usually manifested by thickening and loss of brilliancy of the iris, and adhesion of its pupillary border to the capsule of the lens.

"On inquiring into the history of these cases it will be found that syphilitic affections, both primary and secondary, have been observed, and generally at periods rather remote from the occurrence of the symptoms now complained of. Among the secondary symptoms previously noted iritis may or may not have occurred; and if it has been present, generally all traces of its existence have disappeared.

"My attention was first awakened with regard to such cases many years ago, and I confess that for a long period they seemed very puzzling. We, and I speak of those of my own standing in age, have been so accustomed, from the influence of early professional tuition, and the habits of observation founded upon it, to regard syphilitic affections of the eye as limited almost exclusively to one disease, iritis, that it was with difficulty one could shake off this inherited belief, and rise to the wider, and, I believe, juster view of the subject which these cases suggest. For myself, I must admit that it was only step by step that I was irresistibly led to the conclusion that the influence of the syphilitic poison upon the tissues of the eye possessed a more extended range than had hitherto been assigned to it, and that the deeper tissues of the choroid, retina, and vitreous humor, were probably liable to have their structures deranged and their functions impaired in like manner with those more open to inspection.

"The use of the ophthalmoscope, which has already rendered such invaluable service in investigating the pathology of the deep structures of the eyeball, has clearly shown that these surmises were well founded, and that the failure of vision in these instances was amply accounted for by the structural changes which we have thus been enabled to detect.

"In a recent number of the *Medical Times and Gazette* seven cases are narrated, occurring in the practice of the Royal London Ophthalmic Hospital, which illustrate this subject on various points, and are worthy of the attention of those who feel an interest in it. In one case there was dimness of vision of one eye, following primary and secondary syphilitic symptoms which had occurred some months previously, but had then nearly disappeared, and there was no iritis. Examination with the ophthalmoscope revealed a congested and hazy condition of the retina, with the appearance of a thin gauze before it. The patient was treated with mercurials till the mouth was slightly affected, and afterwards a milder action was kept up with some intermissions during several months. At the expiration of this period the sight was nearly perfectly restored in the affected eye, and the morbid ophthalmoscopic appearances had vanished. In another instance the symptoms in the eye first showed themselves six months after the primary infection; and at the period of admission to the hospital a well-marked syphilitic rash existed upon the shoulders. Both eyes were equally affected in this case, and the symptoms complained of were dim muscæ, and the appearance of clouds of smoke. The patient was unable to read the largest type, or tell the hour by the clock. The attack commenced rather suddenly, first in one eye, and shortly afterwards in the other. The ophthalmoscope showed a turbid vitreous humour in each eye, with numerous white silvery films floating in its structure. The patient, a married woman, was nursing an infant; but, except being somewhat reduced by lactation, was in fair health. Mercury was prescribed, and the baby to be weaned; but unfortunately no record of the result is given.

"In another case, the minute details of which I need not repeat, the affection of the eyes followed the primary syphilitic disease after an interval of several years, and examination with the ophthalmoscope disclosed extensive structural changes in the choroid, optic disk, and retinal vessel, so great as to preclude any hope of the restoration of sight.

"I need not further multiply examples from this source, as they all tend, more or less, to show the occurrence of serious structural changes in the deep tissues of the eye, materially affecting vision, and taking place at periods more or less remote from the infection of primary syphilis. The point of most interest, regarding such cases, is this, that, in general, they do not present any obvious external appearance of their syphilitic origin, and unless the history of each has been minutely inquired into, its real nature would be misunderstood, and the treatment most likely to be effectual would not be adopted. Nor without the aid of the ophthalmoscope could we detect those changes in the deep tissues which give no outward visible sign of their existence, and which yet are sometimes so extensive and important as to be wholly irreparable.

"The following case, which I recently met with in private, illustrates several of the points which appear to be characteristic of this form of secondary disease, and affords, in addition, a good example of the value of the ophthalmoscope, as without its aid it would have been impossible to refer the failure of vision to its true cause, in partial disorganization of the deep tissues of the eyeball.

"Mr. W., a tall, stout, soldier-looking man, connected with the land-transport corps in India, and twenty-two years resident in that country, consulted me about a month ago, complaining of weakness and wateriness of both eyes, with defective vision, especially in the right. He stated that about five years ago, while in a hot district of India, he first observed an appearance of a glare, like stars, before the right eye; and objects looked at seemed to be more distant than they really were. Vision with this eye was also indistinct; but he was able to distinguish one person from another by their features, and with some pain and difficulty could make out the letters of a large type. Since then, vision has still further declined, and the eye has become weak and watery. During the last eighteen months, the left eye has also become weak and watery; but the sight is very little affected as yet. Rather more than five years ago, or about two months previously to the affection of his sight, he had primary venereal sores, followed, in about a fortnight, by an eruption over the arms and chest, which, however, disappeared in a few days, and was succeeded by scaliness of the palms of the hands and soles of the feet, attended with heat and dryness, which continued, more or less, till nine months ago. He had also pains of the bones, coming on six months after the primary disease, and lasting about a month. He says that he never took mercury so as to affect the mouth, but treated himself with one-eighth of a grain of the bichloride once daily during several months. He also applied black wash to the chancre, which healed in about a week. He has never had inflammation of the external tissues of the eyeballs, and there are no traces of iritis visible. He states that he has used his eyes much in writing, sometimes till late in the night. There was slight conjunctivitis observable in the right eye when I first saw him, and the pupil in each eye was of medium size, tolerably regular, and sluggish in its movements.

"Examined with the ophthalmoscope, the optic disk in the right eye was indistinctly seen, as if through a veil or gauze, and was perhaps smaller in dimensions than usual. On the patient rolling the globe directly upwards, the lower part of the retina was seen to be thickly studded with black spots, varying in size and figure, imparting to the membrane the appearance of a leopard's skin. These appearances alone, independently of the history of the case, would have sufficed to indicate the syphilitic origin of the disease, inasmuch as they seem to be, in a great measure, pathognomonic of such affections of the eye.

"With regard to *treatment*, mercury is certainly to be relied upon as the most effective remedy, especially when the structural changes in the deep tissues are extensive and material, as in the instance last cited; and the greatest amount of good which it is capable of doing will probably be obtained by exhibiting it in small and frequently repeated doses, affecting the gums slightly, and maintaining the action during several weeks. In milder cases, where the ophthalmoscopic appearances do not show more than a gauzy haziness of the retina, and indistinctness of the optic disk, the iodide of potassium has been given with good results. In the case from India, above mentioned, I prescribed calomel and opium in small doses; but, as the patient lives at a distance, and has not yet reported his condition, I cannot speak as to the result.

"In addition to the above remarks, I may add that, during a recent visit to London, I had an opportunity of conversing on this subject with several of the surgeons connected with the ophthalmic institutions in the city, as well as with others of much experience in diseases of the eye, and I found that their observations in this class of diseases tallied very nearly with my own. In the wide field which the metropolitan ophthalmic institutions present these diseases are of frequent occurrence, and often appear in very aggravated forms; but even in our more limited provincial spheres, I am inclined to think that they are oftener to be met with than we perhaps suppose, and that they have only hitherto escaped our notice, either from our attention not having been directed to the subject, or because, although we may have observed the consequences of the disease in the production of defective vision, it has not been referred to its true cause, the influence of the syphilitic poison."

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61. *Ophthalmic Ointments.*—Mr. W. White Cooper states (*Lancet*, June 28, 1862) that for some time past his attention has been directed to obtaining a basis for ophthalmic ointments which shall neither become rancid nor irritating to the eye. The material which possesses these qualifications in the highest degree appears to be the butter obtained from the *Theobroma cocoa nut*, from which chocolate is made. This nut contains about four-tenths of its weight of a fixed oil of the consistence of firm tallow; having a rather agreeable and characteristic smell, and little, if any, tendency to become rancid. The butter is obtained by roasting the nuts, bruising them, and then submitting them to strong pressure between heated metallic plates. Though very firm, it has the property of becoming fluid at a low temperature, and when applied to the skin feels cool and pleasant. I have reason to believe that the concrete oil of the cocoa nut (*Cocos nucifera*) is sometimes mistaken for the butter of the *Theobroma*, but it is deficient in the characteristic properties mentioned, being soft, often rancid, and used chiefly for making candles and soap.

I have had the cacao butter mixed with the nitric-oxide of mercury, then moulded into pencils, whereby it can be applied to the edge of the eyelid, or any other point, with great facility. The firmness of the butter renders it an admirable material for suppositories, and its cooling character adds to its value as an application to hæmorrhoids, &c. Should objection be made to its firmness as an ophthalmic preparation, it can be mixed with olive oil, the best proportion being two parts of the cacao butter to three of oil; I mention this, as patients occasionally find fault with the stiffness of the pure butter.

Benzoated lard ranks next to cacao butter, and the fat obtained from the omentum of the calf is a sweet and pure material, though it does not keep so long as either of the other preparations.

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62. *Opium in Conjunctivitis.*—Mr. W. White Cooper remarks (*Lancet*, June 28) that "a weak solution of the extract of opium—one grain to the ounce—has a most beneficial influence on many cases of conjunctivitis. I have seen instances in which the inflammation yielded to this, having resisted every other application. The wine of opium dropped into the eye is a well-known remedy, but very painful, the pain being caused by the spirit. Mr. Squire informs me that the new Pharmacopœia will contain a fluid extract of opium, in which the proportion of spirit is only two ounces to the pint. This will probably supersede the vinum opii, as I believe the benefit is mainly due to the opium, and that the aromatics and the strong wine can be alike dispensed with.

Cases are occasionally met with in which opium excites rather than allays irritation. I prescribed a collyrium of six grains of extract of opium in six ounces of rose-water for a lady who was suffering from slight conjunctivitis. It greatly aggravated the inflammation, and the patient stated that, with her, opium invariably acted as a powerful irritant.

A popular collyrium is a combination of diluted Goulard water with vinum opii; this is open to the grave objection that an insoluble meconate of lead is formed, which may become impacted in the cornea, leaving an indelible mark if there be abrasion or ulceration present. Of this I have seen many examples. The left eye of an artist of my acquaintance has been rendered useless from

childhood by a patch of such deposit in the centre of the cornea. As a rule, it is safest not to employ lead, or other turbid lotions, in strumous or exanthematous affections of the eye, these being frequently attended with ulceration of the cornea. Lotions of zinc and alum, and the solutions of vegetable extracts, as opium, poppy, or belladonna, should be filtered, and if the latter are intended to be kept, even for a few days, a little glycerine should be added to prevent the formation of acetic acid by the change the vegetable matter undergoes, which also gives rise to mouldiness.

MIDWIFERY.

63. *Painless Parturition.*—Dr. GEORGE SMITH, of Madras, communicated to the Obstetrical Society of Edinburgh the following example of this:—

"Some years ago I was engaged to attend an English lady during her approaching confinement, and was startled one day by a hasty summons, coupled with the information that the child had been suddenly born without warning of any kind. On reaching my patient's residence, I found that the child had been born about ten minutes, and that it was still lying, with the umbilical cord uncut, close to the mother's body. The native female servant, at the lady's order, had left the child untouched, merely raising the bedclothes a little to permit the free access of air for the purpose of respiration.

"On inquiry, the lady informed me that she had been for some time expecting her confinement daily; that the previous night she had felt as usual; but that she had had occasion to rise frequently to attend upon her sick child, and that she had got up as usual about half-past five A. M., feeling well, and having no indication of the near approach of labour. Further, that during the forenoon she had walked down a long flight of steps, and across a gravelled walk to a smaller house within the enclosure of her own grounds, where, feeling a little tired, she had lain down upon a bed—that soon after she experienced slight discomfort, likened by her to ill-defined uneasiness of the abdomen under the operation of a mild laxative, followed by an impression that some solid warm body was lying in contact with her person—that she directed her servant to look below the bedclothes, and that the attendant on doing so, found to her surprise the child entirely extruded.

"My patient assured me repeatedly and earnestly that she was quite unconscious of the whole parturient process culminating in the birth of the child, and expressed herself both surprised and alarmed at a delivery so painless and instantaneous. As she was daily, nay, hourly, expecting her delivery, it is but reasonable to suppose that she had been for some time acutely alive to the earliest intimations of commencing parturition, and it is surely remarkable that nothing occurred from which she could have suspected that the act had actually commenced. My patient had no object in deceiving me, and I am quite satisfied of the entire truthfulness of her often—to me—repeated statement.

"This case has a medico-legal significance, as well as a practical. If a female awake, in perfect health, in the exercise of sound reason, and hourly expecting her confinement, having no object for its concealment, but many reasons for its occurrence, being welcomed by her friends, can be the subject of painless, unconscious labour, preceded by no appreciable premonitory symptoms, and making itself known only when the extrusion of the child has been completed in the way described, how much more may we be inclined to yield belief to cases in which it has been averred that delivery has taken place during sleep, without waking the mother, and to others, in which it has been maintained that owing to the painlessness of the parturient process, the child's life has been lost by a fall on the ground, or by being engulfed in a latrine? The child was a female, small, but not much undersized. The mother's first labour—this was the second—was a normal one, accompanied by the usual signs, and extending over six hours in its duration."

Dr. Pattison stated that he had once attended a primiparous patient who suffered no pain at all during labour. He had not been summoned to the case, but happened to call at the time; the child was born quite easily, the patient only experiencing a feeling of pressure.

Dr. Wilson had once been called to see a woman who had been delivered without any pain, whilst she was walking about in the house; and he found the child lying on the floor with the umbilical cord torn across.

Dr. Cochrane thought that such a case as that related by Dr. Smith might more readily occur in a warm country with a relaxing climate. But he had himself seen a woman who had just been delivered of a child almost unconsciously as she was getting out of bed.

Dr. Andrew Balfour stated that he had attended, when in China, the wife of an engineer on board a steamer, who suffered from remittent fever in the eighth month of her pregnancy. The whole ovum in that case was expelled entire without any warning; and when he (Dr. B.) arrived and ruptured the sac, the fœtus was already dead.

Dr. Pattison said Dr. Thatcher used to tell his class of a case where he found the patient had been delivered of an entire ovum with unruptured membranes. Dr. T. had been summoned by the husband, who was in great dismay, because, as he averred, his wife had given birth to a "leg of mutton."

Dr. Alex. R. Simpson stated that Von Ritgen, the venerable professor of midwifery at Giessen had told him, that in the long course of his practice he had met with no less than seventeen cases of labour where the patient had experienced none of the ordinary labour pains; and he (Professor Von Ritgen) had been led to form the conclusion that in perfectly natural labour, pain should not necessarily be experienced, and that we had come to regard pain as a natural and necessary concomitant of labour, merely because women were almost never in a perfectly healthy condition when we were summoned to aid them during parturition. He (Dr. A. R. S.) thought that if Professor Von Ritgen's position could be established—and the facility of parturition among savages went far to prove its truth—then the objection sometimes made to the use of chloroform in labour, on the ground of its being contrary to nature, would be most completely done away with.—*Ed. Med. Journ.*, Nov. 1862.

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64. *Artificial Delivery in Extremis.*—Details of an interesting case of extraction of the fœtus from the womb of a dying woman, by Dr. Belluzi, are given in *L'Union Médicale.* In 1861, the doctor relates that he was called to a woman far advanced in pregnancy, and in the last stage of phthisis. He considered it a favourable case for the post-mortem extraction of the fœtus, as recommended by Professor Rizzoli, *per vaginam*, in preference to the Cæsarean section.

On July 11th, the woman's death seemed rapidly approaching, and the fœtal heart was distinctly heard. A few hours later, the fœtal sounds became sensibly diminished in force; and thereupon it was resolved, instead of waiting for the woman's death, at once to extract the child, while both it and the mother were still alive. The woman was drawn to the edge of the bed, and her legs supported on chairs. "Whilst Professor Rizzoli kept the uterus," writes Dr. Belluzi, "in a suitable position, I introduced my right hand, in the form of a cone, into the vagina, gently dilated the neck of the womb, and at last felt a knee of the fœtus, ruptured the membranes, and brought the knee down into the vagina.

"At the same time, Professor Rizzoli pressed with his hands upon the fœtus (through the walls of the abdomen), so as to aid in imparting to it the movements which occur in the version. This first stage of the operation completed, I baptized the fœtus through the left foot, which protruded. Then, on drawing upon this limb, a spiral movement was given to the fœtus, whereby the nates were turned forwards as they reached the vulva. Immediately afterwards, the other limb was protruded, then the trunk, the shoulders, and the head. The child was alive. The uterus contracted sufficiently to detach the placenta. The mother (who, apparently was insensible to the operation) was replaced in bed. The child was vigorous, though evidently not at full time. It was taken to the Enfans-Trouvés; and two months later, at the time I write, is still there. The

operation did not seem to have in any way injuriously affected the mother. She survived it twenty hours. A post-mortem examination was made twenty-two hours after her death. The uterus was regularly contracted; and no injury was noted, except a slight scratch on the mouth of the womb. This fact demonstrates the ease with which a living fœtus may be extracted from a dead woman, when no signs of labour have appeared. And it will be readily admitted that in the dying woman the operation is as easily performed as in the dead. The case shows that we may, under certain circumstances, rationally resort to the forcible extraction of the fœtus *before* the death of the mother, as thereby we give the child a much greater chance of life. In every case we should follow the rule of Professor Rizzoli, which is, that the operation should be practised whenever the sounds of the fœtal heart become enfeebled. I strongly recommend this operation to the profession; for until now I could not have believed that it was of such easy execution."—*Dublin Med. Press*, Dec. 3, 1862.

65. *Undescribed Cause of Delay in Labour.*—Dr. JAS. SIDEY related to the Obstetrical Society of Edinburgh (July 3, 1861) the history of a case of tedious labour that had lately come under his observation, where the presentation was natural, and the pelvis of ordinary dimensions, but the head remained many hours impacted in the brim before the pains succeeded in forcing it through. After the birth of the child, he had found the face to be unusually broad; and on comparing it with the measurements of some other infants of normal dimensions, he had found it to measure, from one malar protuberance to the other, fully a quarter of an inch more than the largest of the others. He had not been able to meet with any notice of this increase in the size of the malar bones, as a cause of delay in labour; but if attention were directed to the subject, it might prove to be a more frequent cause of tedious labour than at first sight we might imagine.—*Ed. Med. Journ.*, September, 1862.

66. *Use of the Forceps in Tedious Labour.*—Dr. HAMILTON, of Falkirk, made a communication to the Edinburgh Obstetrical Society (Nov. 27, 1861) on this subject, and began by explaining that he had first been led to the publication of the results of his obstetric practice in consequence of a statement respecting the mortality of forceps cases, contained in a review of Dr. Murphy's work in the *British and Foreign Medico-Chirurgical Review*, for October, 1852. When he (Dr. H.) was first about to commence practice, he had been greatly struck by the observation made by Dr. Reid, who had probably been known to many of the Fellows present as a skilful and experienced accoucheur, to the effect that forceps might be used in cases of tedious labour much more frequently than they usually were, not only without danger to the patient but to her advantage. Having found other trustworthy practitioners of the same opinion, he (Dr. H.) had acted on the hint, and from the time when he first began to practise, in 1833, up till 1852, he had employed the forceps in a large proportion of cases of labour, and the results of his experience had only confirmed him in his opinion of their safety and usefulness. He had then been astounded at seeing the statement of Dr. Murphy as to the great fatality in forceps cases; and having himself been under the impression that the use of the forceps was rather gaining ground, he had determined to investigate the correctness of conclusions so entirely opposed to those he had himself arrived at. "The question," as he had stated in a paper he then wrote on the subject, "to be discussed is presented to us in a condensed form at p. 422 of the *Review* referred to, the general conclusions deducible from the statistical facts collected by Dr. Murphy being—1st. That in the forceps deliveries occurring in 78,892 midwifery cases, in the hands of British, French, and German practitioners, nearly 1 in every 4 of the children was stillborn. 2d. That, in protracted labours, 'so far as the children are concerned, the proportion stillborn is very much the same, whether the forceps be employed or not; the difference, if any, being in favour of leaving these cases to nature.' 3d. 'That the use of instruments is to be discountenanced in all but exceptional cases of this kind, in which the habit of the patient is too feeble to admit of her enduring a protracted labour without risk of exhaustion.' 4th. That

Ramsbotham employed the forceps once in 729 cases, Joseph Clarke once in 742, Collins once in 684, Kilian once in 78, Carus once in 14, Siebold once in 9; and 'Dr. Murphy's recommendation is to employ them only in cases of positive arrest,' unless dangerous constitutional symptoms are present." As opposed to this high mortality from the use of the forceps, he (Dr. H.) had adduced the results of his own practice, and had stated that, whilst using the forceps in every seven or eight cases of labour, he had delivered 316 children, all of whom had been born alive. He had subsequently published an article in the *Edinburgh Medical Journal*, claiming for the use of the forceps the same continued immunity; and now he could point to 731 children consecutively born alive, in the delivery of from 90 to 100 of which the forceps had been employed. He (Dr. H.) thought that this startlingly favourable result indicated that the mortality which was usually attributed to the employment of the forceps was rather due to the delay in their application. He believed his practice represented very fairly that of a general country practitioner; though perhaps now that he had acquired more experience the proportion of difficult cases coming under his care might be somewhat above the average, and he now found that cases which he once thought dangerous and difficult became comparatively easy, simply from his constantly following out the principle of not delaying too long the application of the forceps. Remembering the great law that the mortality in parturition increases with the duration of the labour, and believing that the danger was greatest in those cases where the delay occurred during the second half of labour, he was always anxious to shorten this stage by every means compatible with the safety and well-being of the patient and her progeny. The first stage might go on for many hours, sometimes for days, without involving the patient in any risk, and he almost never in any case interfered until after the completion of the first half of labour. But even in an otherwise apparently normal case, if the child's head remained longer than two hours in the maternal pelvis, and the pains were at all severe, he then believed that the child's life was becoming endangered, and he never hesitated in applying the forceps. He had now employed the forceps in about 200 cases, and found no danger whatever if the head had not been allowed to become impacted. He employed the forceps in most cases as a direct extractor, but in some cases also to rectify the position. In one patient he had found it necessary to employ the forceps in nine out of her twelve confinements, although her pelvis was sufficiently roomy, in consequence of the fœtal head failing to make the necessary turn in the pelvis. And now he might be allowed to state what he did not do. In the first place, he now almost never used ergot of rye in any midwifery case. He had rarely at any time employed it as an adjuvant in the first stage, and latterly he had also refrained from administering it during the second portion. He had no prejudice against the drug, but he had never been able to see that it fulfilled any good indication during the first stage of labour, and gradually he had come to give up its use altogether, so that he had not administered it to one out of his last 400 parturient patients. Secondly, he never greased the forceps, as in lectures and text-books we were instructed to do. He thought the greasing unnecessary, because there is usually no difficulty in introducing the instrument, and the unguent interfered with the firm hold of the fœtal head, which was necessary to permit of due tractile force. When he first went to Falkirk he had attended a case along with an old practitioner, where the patient was delivered of twins, both of which were born dead after a tedious labour. On Saturday last he had attended a case of precisely the same kind, where he did not doubt that he would have had the same unhappy result of producing two stillborn children, had he not extracted the first child with the forceps after its head had been but a short space of time on the perinæum: as it was, both children lived. He had described a case where he could not get the head of the child brought into the pelvis in a right direction, and where, after long-continued efforts with the forceps to rectify the position of the head had failed, in consequence of its always turning round again, he thought from the opposition presented by the rectum, he had at last to perforate the head and deliver by craniotomy. He had recently met with a similar case, where the head lay in the left oblique diameter occipito-anteriorly, but could not be brought down into the pelvis until he had turned it by means of the forceps

through three-fourths of the circle of the pelvic brim, so that at last it presented occipito-anteriorly in the right oblique diameter.

Dr. Hamilton maintained that the forceps was preferable to turning, because he had seen several children born dead where the latter operation had been employed, and in one case the vertebræ of the neck had become dislocated whilst the child was being extracted, so that delivery could not be completed until the fœtal head had been opened. He always used Ziegler's forceps, and usually applied them after the head had descended so far into the pelvic cavity as to allow the tip of the ear to be easily felt by the finger. In reply to a question put by Dr. Moir, Dr. Hamilton repeated that he had not had a single still-birth among 731 children that he had delivered successively; and in reply to a question by Dr. Figg, he (Dr. H.) explained that although he had delivered some children that died very shortly after birth, yet he did not count a child stillborn if it continued to breathe, if only for five minutes.—*Edinburgh Med. Journ.*, Oct. 1862.

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67. *Post-partum Hemorrhage.*—Dr. HAMILTON stated to the Edinburgh Obstetrical Society, that in the treatment of *post-partum* hemorrhage his practice was to clear out the clots from the interior of the uterus, and then to compress the uterus between the two hands. To produce effectual compression he introduced one hand into the vagina and applied it along the back wall of the uterus, and by then applying the other hand on the abdomen he could keep the uterus flattened between the two hands for ten minutes or a quarter of an hour, or three-quarters of an hour, or till such time as all tendency to the recurrence of the hemorrhage had ceased. The uterus could be felt between the two hands like a collapsed India-rubber bottle, and the front and back walls could be held in most accurate contact. He had followed the practice, and that of grasping the mouth of the uterus, for above twenty years, and never saw a case where he could not at once and effectually check the flooding after delivery.

Professor Simpson remarked that the practice recommended by Dr. Hamilton was attended with this drawback in some cases, that the introduction of the hand into the vagina was occasionally so painful that the patient rebelled against it. In one case the patient would not submit to the introduction of the hand except on condition that she were kept under chloroform. He preferred to compress the uterus through the abdominal walls, and found them so relaxed that he could easily pass one hand behind and the other in front of the organ so as to compress it between them.—*Ed. Med. Journ.*, Oct. 1862.

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68. *New Transfusion Apparatus.*—Dr. HAMILTON exhibited to the Edinburgh Obstetrical Society an apparatus which he had contrived for the performance of transfusion, and gave the following account of it:—

The method of treating *post-partum* hemorrhage, which I have described in the last October number of the *Edinburgh Medical Journal*, furnishes to the practitioner a simple, and, as far as my experience for upwards of twenty years in its use enables me to speak, a certain and immediate means of restraining this affection. I have said, however, that even where this is done at once and effectually, death may take place from the drain of blood having already been so great, or so rapid, that the system is unable to rally, notwithstanding the use of all the common appliances. Two years since, I met with a painful case of this kind. Returning from the country about two o'clock one afternoon, I was told that urgent messages had been left for me to see a patient in the town, whom I found with all the usual symptoms of extreme depression from flooding. A midwife had delivered her some hours previously, and a brother practitioner in my absence had also seen the woman. I instantly extracted from the uterus a moderate-sized clot of blood, and applied compression with both hands, in the way I have explained in the article referred to, so that I was certain no more blood was lost. Notwithstanding this being done, and also pouring into the patient an abundance of stimulants, the urgent symptoms continued to increase, so that about 3 P. M. her case was becoming desperate. I therefore resolved, with the assistance of my professional brother, to attempt staying the fatal result by transfusion. My transfusing apparatus was not in such exact working

order as to give me perfect confidence in operating with it; and, while getting this remedied, about half an hour was lost, and the patient sunk. I have seen and heard of a good number of such cases in my own neighbourhood, and quite recently a lady under my care very nearly lost her life from an insidious flooding of about four hours' duration. These distressing cases determined me, when next similarly called upon to act, to have my transfusing apparatus in working condition, and especially to have the syringe in such a state as to secure me from the risk of pumping air, instead of blood, into the patient. I was not very much encouraged by the trials I made on this subject, and I at first thought of connecting with the tube leading from the syringe a glass trap, to catch bubbles of air, if they should by accident get mixed with the blood; and, thinking more upon the subject, I asked myself whether there existed any necessity for a syringe at all. The result was, the construction of the simple little instrument which I now exhibit. It consists of a funnel for receiving the blood, say four inches broad at the mouth, with a stop-cock attached to it; of a small tube, for introduction into the vein of the patient, also having a stop-cock attached to it; and of an India-rubber tube, two feet long, for connecting the two. In operating with this instrument, I propose that the patient should be placed at a lower level than the person from whom the blood is to be drawn, so that we may have, 1st. The force of gravitation to impel the blood forwards; and, 2d. That we may thus effectually provide for the non-entrance of air into the veins, as the air, being the lighter body, must always keep on the surface. In order to test the practical working of this instrument, I got two dogs, upon which I performed a few experiments. Having heated the instrument, by pouring warmish water through it, in the first experiment I opened the jugular vein of the dog from which the blood was to be taken, and allowed the blood to issue from the tubule before this was introduced into the same vein of the other dog. I did this in order to expel the air, but found that, during the time thus lost, the blood in the funnel and tube had coagulated. In my next experiment I avoided the chance of this happening, by filling the tube and the lower portion of the funnel with warmish water, introducing the tubule into the vein, and then opening the vein of the dog from which the blood was to be drawn. In this way a small quantity of the blood ran off, but still coagulation took place too rapidly to make the experiment satisfactory. In my third experiment I used simply luke-warm water, and then I found I could with ease inject any quantity I desired. I now tried the action of the apparatus with human blood. I first filled it, as before, with luke-warm water, and shut the stop-cocks; and, just before opening the vein of the patient, emptied out the whole except what remained in the tube and bottom of the funnel, which I afterwards found amounted to about two drachms. As soon as two or three drachms of blood had been drawn, I opened both stop-cocks, and allowed it to run off, and I found that it ran in a continuous stream into a plate, until I had obtained the quantity I wished to abstract, viz., about eighteen ounces. I found that, by regulating the stop-cock connected with the funnel, I could, with great ease, keep only a few drachms in the funnel, thus making the transfer from the patient to the plate almost immediate. I repeated this experiment, with exactly the same result: the blood in the plate presenting next day, as far as I could judge, precisely the same appearance as if it had been drawn direct from the patient. I find that water falls through the whole length of the tube in about 2½ seconds, and an ounce of water runs off from the funnel in 8 seconds, so that the exposure of the blood, where the stream is kept continuous, must be very trifling, and probably will be found, when the instrument used is made entirely, or chiefly, of non-conducting materials, neither to lower its temperature much, nor to alter unfavourably its vital properties. Combining the results of the two sets of experiments, there seems to be little reason to doubt that transfusion of blood, or injection of water or other fluids, might with ease be effected with this instrument in the human subject, or in animals. Transfusion with dog's blood is much more difficult than where human blood is employed. Dr. Blundell found that the first coagulates in 10 seconds, whereas the latter takes 60 seconds to coagulate; and hence, no doubt, the reason why he employed human blood to transfuse into dogs.

My feeling is, that many lives are annually lost, in obstetric practice alone,

from loss of blood; and, looking at the recorded cases I have seen in which transfusion had been employed, it seems to me that they offer great encouragement to its more frequent use. The great obstacles I think hitherto to using it have been, the complexity and expense of the apparatus used, the dread of introducing air in dangerous quantities into the veins from the use of the syringe, and timidity on the part of the surgeon, from want of dexterity or want of practice, in performing the operation. If my anticipations be correct, such an instrument as I have exhibited may remove the two former obstacles, for it is so simple, that it can with the greatest ease be cleaned and kept in order; it will cost only a few shillings, and could therefore be in every practitioner's possession; and, with the most ordinary care, it renders impossible the entrance of air into the veins. As to the third obstacle I have mentioned, practitioners could easily remove it by performing a few experiments on dogs, with water instead of blood: the injection of a moderate quantity at a proper temperature apparently doing them no harm. I will only add the usual caution given in these cases, that the experimenter be careful to expose properly the vein before incising it, otherwise he will run great risk of injecting the fluid into the cellular tissue, instead of the vein. I was assisted in my experiments by Mr. Heriot, veterinary surgeon, Falkirk, who secured the dogs, and applied the ligature to "start" the vein. After shaving off the hair, I pinched up the skin over the vein with my left thumb and forefinger, made an incision with a sharp curved bistoury in the course of the vein, gently dissected the cellular tissue from the vein, and then opened it.

After I had made the experiments I have detailed, I found, on consulting Dr. Blundell's paper on Transfusion, and his Principles of Midwifery, published in 1839, that he also had the idea that an instrument of a simple kind might be used in transfusion instead of the syringe, but, curiously enough, he seems never to have constructed or employed it. In his Principles of Midwifery (p. 255), he says, "transfusion from artery to vein, or perhaps even from vein to vein, might be accomplished by tubule simply;" that is, as I understand it, by connecting the two together; and again, "a fall of two or three inches, perhaps less, is sufficient to move by gravitation the blood into the vein." Dr. Blundell proposes to call this a "gravitator," and the name seems a very appropriate one both for his and my own instrument. Instead of two or three inches of a fall, however, I think that in my instrument great advantage will result from having the India-rubber tube two feet in length, as this both gives facility in adapting the instrument, and furnishes no more than enough of gravitating power for propelling the fluid, as a substitute for the syringe. It seems to me, however, that quite sufficient force can be thus acquired for what is wanted, of a kind, too, somewhat like the equable gentle force employed by nature in the venous circulation; and that, until coagulation takes place, there need be little fear of the flow of blood keeping continuous. If coagulation has taken place, any exertion of force with a syringe or otherwise would only, I think, be likely to do harm, by propelling coagula into the veins. In such a case, much the best plan, I think, would be at once to remove the instrument, clean it out, and reapply it.

In transfusing in the human subject, I would be inclined to proceed in the same way as I did in my second experiment on the dogs. Filling the instrument with water of the proper temperature, and introducing the tube into the vein of the patient, before the supplying vein is opened, will both prevent any material abstraction of heat from the blood, and will also obviate the risk of coagulation, should any unexpected delay occur. The two drachms of water that would thus be first introduced into the veins, would probably be beneficial rather than otherwise.

In the instrument I have used, the two stop-cocks and the tube to introduce into the vein are metallic; but Messrs. Thornton inform me, that these, as well as the funnel, could be made of vulcanite, one of the best materials I know of for such a purpose, being both a good non-conductor of heat, and little liable to alteration of its surface. Any one wishing to possess such an instrument may obtain it by applying to Messrs. Thornton, India-rubber Warehouse, Princes Street, Edinburgh.—*Ed. Med. Journ.*, Oct. 1862.

69. *Repeated Twin Births.*—J. L. Brittain communicated to the Edinburgh Obstetrical Society the following case of frequent twin pregnancy, which occurred in the practice of his father:—

"Mrs. J., æt. 47, was first pregnant at the age of 25. She has had 14 pregnancies and 25 children, having had twins 11 times. Of the 11 cases of twins, in 8, both children were born at the full time; in 2, one fœtus was aborted about the third month, the other being carried to the full time; and in one, she miscarried both at the fourth month.

"Of the 8 cases in which the children were born at the full term, the sex was boy and girl, 5 times; both girls, twice; both boys, once.

"In the miscarriage case they were boy and girl; in the first case of miscarrying, one of the two, a girl was aborted, a boy born at full time; in the second, a boy was aborted, and another carried.

"Mrs. J.'s mother had twins once; but she never heard of another instance in either her or her husband's family.

"Mrs. J. was delivered—

		Presentation.
1839, Sept. 9, Boy and Girl.	Full time.	Both head.
1840, July —, Girl.	Four months.	Not observed.
1841, Jan. 12, Boy.[1]	Full time.	Head.
1842, Nov. 22, Girl.	Full time.	Head.
1843, July —, Boy and Girl.	Four months.	Not observed.
1844, July 21, Boy and Girl.	Full time.	Both head.
1845, July 3, Boy and Girl.	"	Both head.
1847, April 10, Boy and Girl.	"	1st, foot; 2d, head.
1849, July 26, Boy.	"	Head.
1851, Jan. 24, Girl and Girl.	"	1st, head; 2d, foot.
1852, May 7, Girl and Girl.	"	1st, breech; 2d, foot.
1853, Aug. 2, Girl.	"	Head.
1854, Aug. 17, Boy and Boy.	"	Both head.
1855, Nov. 17, Boy.	"	Head.
(And miscarried a boy in April.)		
1857, April 6, Boy and Girl.	"	1st, foot; 2d, head.

"All at full time born alive. Some died within twelve months, some in a few years; and there are several alive and strong."—*Ed. Med. Journ.*, Nov. 1862.

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70. *Extra Uterine Pregnancy.*—Dr. Brandt, of Madeira, presented to the Obstetrical Society of Edinburgh (November 13, 1861) the following notes of a curious case of extra uterine conception: Francisca Amelia Vieira was born in the island of Madeira in the year 1778. Was married to Alexander Vieira in 1795. Was confined of her first child (a son) on the 20th of September, 1796, who died in London on the 31st March, 1802, aged five years, six months, and ten days. Five years after the first confinement she had a daughter named Maria, who was baptized at home, and died soon after. Three years after this she became in the family way, but was never confined of it. Four years after she was confined of a son named Ernesto, who is still living in Italy; still remaining in the family way of the third child. Seven years after the birth of Ernesto, she was confined of a daughter, who is also still living, called Amalia Augusta Vieira. She died on the 7th September, 1858. On the 8th September, 1858, at 8 o'clock A. M., the post-mortem examination was made on the body of Francisca Amelia Vieira, in the presence of Dr. Juvenal Osorio de Ornellas, Surgeons Joao Nepomeceno Gomez and Francisco Simplicio Lomelino, Henry Crawford, the head nurse, several students and chemists, and the servants of the hospital. A bony tumour was extracted from the abdomen, on the right side of the uterus in the Fallopian tubes of that side; the uterus, and Fallopian tubes on the left side were perfect. The tumour weighed 4 pounds, was 8 inches in length, 5¼ inches in diameter, and 16 inches in circumference. The tumour was divided longitudinally with a saw, as near the centre line as possible.

[1] Within six months after the last.

The two parts of the tumour which I saw in April, 1861, were very much disfigured, being badly preserved in a dry state, and almost crumbling to pieces.

Francisca Amelia Vieira was born in 1778.

Married	in	1795 . . .	17	years old.	
First child	"	1796 . . .	18	"	Son.
Second child	"	1801 . . .	23	"	Daughter.
Pregnant	"	1804 . . .	26	"	Not born.
Third child	"	1808 . . .	30	"	Son living.
Fourth child	"	1815 . . .	37	"	Daughter living.
Died	"	1858 . . .	80	"	

Was pregnant of the third conception fifty-four years.

The tumour or bony cyst contained a fœtus, which, from certain signs which will hereafter be mentioned, must have lived a long time after the natural term of birth. Its position in the bony case was, head uppermost, looking to the left and downwards, spine and back lying against the right side of the cavity, the nates occupied the inferior part of the cavity, the thighs and legs turned up, so that the feet were next the head; the whole body was twisted. It so happened that the saw cut through the head and body, dividing it through the median line; but as the body was twisted, the section could not show two equal sides.

The head, in consequence of the pressure exercised on it by the cyst, was crushed in such a way that the parietal bones *passed over* the occipital and part of the left temporal bones, and *under* the posterior border of the frontal bone; from appearances the whole of the cranium was ossified.

The upper jaw of the larger half of the head has three teeth, one of which appears to be the second molar; the depressions of these teeth can be seen on the corresponding side of the other half of the head.

The two inferior extremities and the right arm and hand are placed between the right side of the head and the parietes of the cyst, in a very compressed state. The left arm and hand are situated on the opposite side of the head, between this and the corresponding side of the cyst, also in a compressed state.

Part of the umbilical cord can be traced round the neck, along the right side of the face and body, with the inferior members, to the navel. The instep of the left foot is placed against the chin and mouth, there forming a depression. From the different positions of parts above mentioned, it is clear that the whole body from the neck downwards is twisted from left to right, and the inferior members are turned upwards along the right side of the trunk.

The right knee lies on the mastoid process (right); the right foot lies in the following way: External border on sutura sagittalis. Heel, on the molar bone, right side. Sole, part on the right side of the frontal, and part on the temporal bone (right). The left femur, which was cut longitudinally by the saw, presents a small medullar cavity; the compact tissue is extremely hard, and has the appearance of ivory (eburné). On the condyles of the tibia can be seen remains of the epiphysarian cartilage; the left omoplate, which was also sawed, is extremely hard. The liver is excessively large; part of the intestines are visible. —*Ed. Med. Journ.*, September, 1862.

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71. *Extra Uterine Fœtation: The Fœtus in the Sac of the Hernia.*—An instance of this extraordinary and probably unique occurrence is related by Herr W. Müller, a surgeon of Hohenweihr. The woman was a strong person, aged 38, accustomed to very hard physical labour, in consequence of which she had become affected with an inguinal hernia of the right side. Under these circumstances she ceased to menstruate, and began to experience all the signs of pregnancy, except that the belly did not enlarge. The hernial tumour, however, steadily increased in size, and on M. Müller's first visit to the patient he could detect by means of the stethoscope a sound exactly answering in character to a placental murmur. The diagnosis of a living extra-uterine fœtus was confidently made, and, as the woman was at full term, an operation was proposed and assented to. An incision having been carefully made into the sac, the fœtus was cautiously extracted, and found to be of full development and healthy. The cord was tied in the ordinary way, and divided. The superficial hemorrhage

was easily arrested, the placenta removed, and a compress applied, when the patient was observed to become silent and pale; and the signs of an internal hemorrhage developed themselves. In spite of remedies the woman sank one hour after the conclusion of the operation. Chloroform was used in the performance of the latter. Unfortunately no necroscopic inspection of the body could be obtained, as the friends had religious scruples on the subject.—*Lond. Med. Rev.*, Oct. 1862, from *Allgemeine Wiener Med. Zeitung.*

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72. *Retroversion of Pregnant Uterus.*—Dr. Bruce read before the Edinburgh Obstetrical Society the following case of this: "On the 24th of March last, I was sent for to see Mrs. G., and on visiting her I found her condition to be as follows: She is an unhealthy woman; one arm is almost useless; pieces of bone have come out of it, and others will probably follow. She has an anxious expression of countenance, and complains of frequent efforts to bear down, and of difficult micturition. She had been troubled with prolapsus uteri for some time before, which condition disappeared, and then the above symptoms supervened. These had existed for several days before I saw her, and she had sent for a midwife, thinking she was about to miscarry. She thought she was pregnant, not having menstruated for three months previously. Her abdomen was very much enlarged, as much so as at a considerably advanced period of pregnancy. General treatment was had recourse to for a time, but only with partial and temporary benefit.

"On making a vaginal examination then, I failed to discover the os uteri, and could only feel a tumour of considerable size, supposed to be the uterus much enlarged. No improvement taking place, on the contrary, the patient becoming worse, and the bearing down more severe, I made a further examination, and, on pressing up as far as possible to try and reach the os, a gush of liquid came away, and the patient expressed herself at once as being much relieved, while there was a corresponding reduction in the size of the abdomen—the walls of which were previously quite tense becoming much more yielding. This amelioration, however, did not continue long, as next day matters were much the same as before, the fluid having reaccumulated.

"On repeating the examination, and pressing upwards as before, more fluid came away just as on the former occasion, and with the same effect of affording relief to her symptoms; but, as at the former examination, I was unable to touch the os uteri. The fluid continued to flow in large quantities, rendering the patient very uncomfortable. The urine was drawn off several times, but there was no great accumulation of it.

"At this period of the case Dr. Keiller saw the patient along with me, and was equally unsuccessful in reaching the os. He agreed with me in thinking that the uterus must be retroverted, and recommended that the patient should be removed to the infirmary, when he would give chloroform and introduce the hand into the vagina, so as to make a thorough examination, and remedy the condition if possible. I may state that every attempt at examination brought on very severe bearing-down efforts. After taking some time to consider, she made up her mind to go to the infirmary, and on the 22d of April she placed herself under Dr. Keiller's care. She was then brought under the influence of chloroform, and Dr. Keiller having introduced his hand well in, was enabled to feel the os tilted high up, and now the excessive bearing-down was well seen, the uterus being forced down in a very extraordinary manner, and pressing strongly upon the perineum, just like the child's head during the strong expulsive pains before delivery; it could be compared to nothing else. Dr. Keiller now by manipulating (drawing down the os with his thumb, and pushing up the body of the uterus with his fingers), was successful in replacing the organ in its normal position, the mass going up with a jerk, immediately upon which the tumour disappeared, and the os was found to occupy its proper place. A little blood came away during the operation. Next day the patient expressed herself as being greatly relieved, the bearing-down pains having entirely ceased, and her countenance betokening how much easier she was. The existence of pregnancy was not decidedly made out, for if she had been in this condition we would have expected labour to be induced by the treatment she was subjected to, particu-

larly after the escape of the liquor amnii, but nothing of the kind occurred. She remained in the infirmary for some time subsequently, being very weak, and some small portions of bone were removed from the arm; but before she left the sounds of fœtal heart were distinctly made out. In the month of August I saw this patient going about comparatively well, and expecting her confinement in a month or two. I afterwards ascertained that she was delivered on the 25th September of a living and healthy-looking child, and made a very good recovery." —*Edinburgh Med. Journal.*

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73. *Dr. Hodge's Pessary for Retroversion of the Uterus.*—Dr. CHURCHILL exhibited to the Dublin Obstetrical Society, specimens of a pessary for retroversion, invented by Dr. Hodge, of Philadelphia. Each pessary consisted of an upright and a horizontal portion; the former to occupy the vaginal *cul-de-sac* behind the cervix uteri, whilst the latter portion lies along the vagina to the arch of the pubis. Dr. Churchill reminded the society that some years ago he exhibited a pessary constructed for the purpose of distending upwards the posterior *cul-de-sac*, but differing in form from Dr. Hodge's. After trying both, Dr. Churchill pronounced his experience to be entirely in favour of Dr. Hodge's instrument, and he begged to recommend it to the society. He had tried it in ordinary cases of retroversion; and in one extremely difficult case, and with remarkable benefit. It occasions no irritation, absolutely precludes the retroversion when properly fitted, and will materially aid in raising the fallen womb when it cannot be at once reduced.—*Dublin Quart. Journ. Med. Sci.*, Aug. 1862.

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74. *The Changes of Body-weight in Pregnant, Parturient, and Puerperal Women.*—Dr. GASSNER availed himself of his residence in the Lying-in Hospital of Munich to institute an extended series of observations on the variations in body-weight of pregnant and lying-in women. His observations appear to have been made with every care to avoid fallacy. His memoir contains a number of tables, in which the results are detailed and classified. We can only here give some of the conclusions:—

Pregnancy.—During the last three months the body increases in substance, and so remarkably that the gain cannot be explained by the growth of the ovum alone. The maternal organism shares in the increase. A diminution of weight is pathological. The increase of the body-mass during the period named is a thirteenth part of the body.

Primiparæ do not gain so much in proportion as multiparæ.

The intra-uterine retention of a dead fœtus is constantly attended by a considerable loss of the maternal body-mass. This circumstance may come in aid to diagnosis, when auscultation no longer detects sounds of fœtal heart.

Labour.—The loss of weight following labour is on an average nearly the ninth part of the body-weight of a pregnant woman who has reached the end of the tenth month. It is constituted of the expelled ovum, blood excrements voided during labour, and the lung and skin exhalations.

The weight of the entire ripe ovum, fœtus, liquor amnii, and placenta is about the 10.8 part of the body-weight of the woman in labour.

The mass of the several parts of the ovum at the end of pregnancy may be stated as follows:—

The weight of the child	: to weight of the ovum	= 1 : 1.755
" " liquor amnii	: " "	= 1 : 3.070
" " placenta	: " "	= 1 : 9.600

The weight of the ovum and of its components—that is, of the child, liquor amnii, and placenta, is in proportion to the body-weight of the mother.

The mature ovum of the primipara is smaller than that of the multipara.

The quantity of the amniotic fluid increases during the latter three months of pregnancy.

In all cases where a change of position, or a *culbute* of the child, took place in utero, a disproportional increase of liquor amnii was present.

The size of the periphery of the abdomen at the end of pregnancy is in direct proportion to the sum of the body-weight of the pregnant woman. This should be borne in mind in estimating the question of twins.

Puerpery.—The loss of weight during the first eight days of the labour, occasioned by excretions, secretions, especially of the lochia and milk, increased excretion of urine, and the involution of the genitals, is on an average the twelfth part of the mother's body. This loss is the greater in proportion to the proximity of the labour to the normal term of gestation.

In primiparæ and in women who do not suckle, this loss is somewhat less than in pluriparæ and suckling women.

The loss is in direct proportion to the quantity of the body-mass of the lying-in woman.

The surprising loss of weight on the first day of childbed is due to the increased secretion of urine resulting from the resorption of the serous infiltration which took place during pregnancy, to the more copious lochial discharge, and to the scarcely ever failing sweat.

The loss of weight due to labour and childbed amounts on an average to the fifth part of the body-weight of the pregnant woman.—*Brit. and For. Med.-Chir. Review*, Oct. 1862, from *Mon. f. Geburtsk*, January, 1862.

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75. *The Organic Connection of the Fallopian Tube with the Ovary.*—Dr. Panck, relying upon comparative anatomy and observations on the human subject, submits that the adhesion of the orifice of the Fallopian tube with the ovary at the time of conception, takes place through a newly-formed membrane, which at a later period is absorbed. He examined the body of a girl who had died shortly after conception, and found a delicate new membrane, which fastened the fringes of the tube to the ovary. In subsequent researches Dr. Panck found a similar membrane so frequently as 34 times out of 58 cases, but only in women who had borne children, and only on the posterior wall of the uterus and of the ala vespertilionis. At times rudiments only could be observed; in other cases numerous strings and expansions covered the whole posterior surface of the uterus and alæ. These have extended over the anterior aspect, on the bladder or rectum. The most various degrees of adhesion, from partial attachment to complete capsular investment of the ovary, were found. The membranes were thin, delicate, translucent, and could be easily separated from the serous membrane, which always exhibited its normal appearance. Similar appearances are found in animals whose ovaries lie free, as in man.—*Brit. and For. Med.-Chir. Review*, Oct. 1862, from *St. Petersb. Med. Zeitschr.*, 1862, and *Mon. f. Geburtsk*, June, 1862.

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76. *Ovarian Cyst Discharging through Vagina.*—The following note from Dr. Irvine, of Pitlochry, was communicated to the Edinburgh Obstetrical Society:—

"Mrs. Sloan, æt. 42; married for twenty-two years. Never pregnant. Has menstruated regularly all her life, and still continues to do so. First discovered a swelling in her right side fifteen years ago, which was recognized as an ovarian tumour. For six years the abdomen has been enormously distended, much as at present, when it measures 46 inches, she being a middle-sized and spare woman. She suffered much from the distension, such as inability to lie down, retention of urine requiring the aid of the catheter, œdematous legs, etc., until a year ago, when a watery fluid began to escape from the vagina, and has continued, almost weekly, ever since, with obvious subsidence on each occasion of the abdominal distension and relief of her distress. The quantity discharged at any time she estimated at about a quart, sometimes more, sometimes less; but it is invariably most abundant just before the menstrual period; at this time she has always experienced an increase of her sufferings, but this monthly aggravation has been much less since the watery discharge began. The fluid escapes without previous warning or accompanying pain, often when sitting quietly in her chair, is perfectly limpid, and scarcely stiffens or discolours her linen. Her general health is good, she performs the work of her house often without a servant, can walk several miles at a time, and her chief complaint is of the weight and of the aching in her loins after any fatigue."

Dr. Moir mentioned that the late Dr. Hamilton had a similar case, the preparation of which was in the University. He (Dr. M.) thought that in cases

where the ovary was adhesive to the Fallopian tube, that the fluid might find its way through the latter into the uterus and vagina.

Dr. A. Simpson stated that Frank had recorded a case of this kind, and had expressed the opinion that the periodical discharge of fluid took place through the Fallopian tube; but it was difficult to conceive of that narrow canal allowing of the passage of the large quantities of fluid that seemed at times in such cases to escape; and it might perhaps be found that in some of these cases an adhesion had taken place between the cyst and the body of the uterus or the roof of the vagina, where subsequently rupture of the walls occurred.—*Edinburgh Med. Journal*, Oct. 1862.

77. *Diseased Placenta.*—Dr. MCCLINTOCK observed, at the meeting of the Dublin Pathological Society, March 29, 1862, that diseases of the after-birth were so rare, and their pathology was so much involved in obscurity, that any new fact, however small, was worth being brought forward, and put on record. Before he showed the coloured drawing he intended exhibiting to the society, he would advert to the pathology of the disease, which had been very unhappily termed "hydatids of the uterus," which was a great misnomer—for the disease in question was not hydatids, neither was the uterus the part affected. The disease was seated in the chorion, and consisted in a development of cysts on its outer surface. It was correctly called, by Mr. Paget, "cystic disease of the ovum."

There was no recorded instance of a living embryo being born of a mother who had this cystic disease. The opinion entertained in the present day was that the cystic disease in the chorion was a consequence, a result of the death of the embryo, and not the cause. There were, just then, two points which he wanted to dwell upon with reference to hydatids of the uterus: First, That the disease occurred in the villi of the chorion. Secondly, that it was extremely rare to see an embryo expelled when the disease existed; and that there was no recorded example of a living embryo being so expelled. Nine cases came under his own care of the disease, and in one only was there any vestige of an embryo. These cysts very rarely became developed after three or four months; but when they originated after that period they were necessarily confined to the placenta.

Now these remarks were merely prefatory to the exhibition of this very beautifully executed and faithful representation of a placenta. The history of the case was as follows: The patient from whom this placenta was expelled was confined in the Lying-in Hospital, at the end of eight months, of twins. There were two placentæ, of about the usual size, one of which was represented in the drawing. Both children were alive; and, on an examination of the surface of the after-birth, there were discovered four or five well marked cysts, the largest the size of a full grown grape. Now what was the nature of these cysts? He was not aware of any recorded instance where such a morbid appearance was found in the placenta. He had examined many diseased placentæ himself, and except in that solitary instance, he never saw anything similar to this. They were true cysts, and contained a limpid yellowish-coloured fluid, of a somewhat syrupy consistence. On close examination these cysts—five in number—were found lying on the external surface of the chorion, and closely connected with it. Now, what was the nature of these cysts? In what light are they to be regarded? He was of opinion that their pathogenesis was the same as that of the cystic disease or vesicular hydatid of the ovum. They were certainly a cyst formation, attached to the outer surface of the chorion. If this opinion were correct, the case was a very singular one, as furnishing an example of the vesicular hydatids at so late a period of gestation as the eighth month, and also as being in connection with a living fœtus.—*March*, 29, 1862.—*Dublin Quart. Journ. Med. Sci.*, Aug. 1862.

78. *Apnœa Neonatorum.*—MR. GREAVES, of Manchester, in a valuable paper on this subject in the *British Medical Journal*, page 65, thus sums up the conclusions at which he has arrived: 1. That the effect of even the earlier labour-pains is to close the ultimate ramifications of the uterine arteries, but that this closure is temporary only, and ends with the termination of each pain. 2. That, during the pains, the blood contained in the sinuses of the maternal placenta,

not being renewed by fresh supplies of arterial blood from the curling arteries, cannot effect the needful changes in the fœtal blood in the placental tufts. 3. That the blood contained in the tufts, remaining venous, stagnates in their capillaries, and that the umbilical circulation is thus arrested. 4. That, as a consequence of this arrest, the aorta of the fœtus and the ventricles of its heart become congested, and at the same time the brain ceases to be supplied with arterialized blood. 5. That, consequently, the rate of pulsation of the fœtal heart sinks nearly to half its normal frequency. 6. That, if these periods of lowered force of the fœtal circulation occur too frequently, as in tedious labour, or too closely together, as in very hurried parturition, the child may be born almost or altogether inanimate. 7. That the effects of the suspension of the breathing function of the placenta are intensified by pressure on the funis, or on the head or thorax of the fœtus. 8. That where there is not some mechanical obstruction to respiration, such as tenacious mucus in the fauces, or the membranes over the face, the efficient cause of still-birth is an excessive degree of a condition which at birth always prevails normally, viz., congestion of the fœtal heart, which is to be relieved, first by bleeding from the cord, and, secondly, by exciting respiration. 9. That the difference between the syncopal and apoplectic forms of still-birth, is that in the latter there have been imperfect acts of respiration which, by closing the foramen ovale, have caused general venous congestion.—*Lond. Med. Rev.*, Oct. 1862.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

79. *New Cause of Death under Chloroform.*—Dr. G. W. Balfour remarked at the meeting of the Obstetrical Society of Edinburgh, June 12, 1861, that as the public and the profession were indebted to an obstetric physician for the benefits of chloroform, the following peculiar case of death from that article, though strictly speaking a surgical one, could not be uninteresting to an obstetrical society. The case occurred during the Burmese war in 1853; and was related in a letter from John Balfour, Esq., D. I. G., then field-surgeon to the army in Burmah. A soldier received a gunshot wound through the upper part of the thigh, and secondary hemorrhage repeatedly recurred. It was supposed that the profunda or one of its branches was injured, and it was determined to tie the femoral artery above and below the origin of the profunda;—this was done while the man was under chloroform. In the course of the operation the man, who had had his dinner previously, became sick and vomited. He subsequently sank and shortly died from exhaustion, as was supposed. On examination of the body, the profunda was found cut across by the ball, and a false aneurism formed at the seat of injury, and *the trachea was found filled with vomited matters.* Dr. Balfour remarked that, though an extreme case, this was but a sample of one very common source of danger in the use of chloroform, arising from its anæsthetic properties interfering with the natural actions of the nervous system, and that the anæmic condition of the patient probably had its influence in favouring the fatal result, anæmia being one of the conditions most commonly found in all fatal cases following the using of chloroform; in which, however, by far the most common and constant post-mortem appearance was a collapsed condition of the heart, a condition rarely, if ever, found after death from any other cause, and favouring the supposition that death in most of such cases is caused by direct paralysis of that organ, a supposition further favoured by the fact, that death from chloroform has generally occurred when the patients were in the sitting or half-lying posture, when of course syncope was more likely to occur than when wholly recumbent, as well as by its remarkable safety in midwifery, in which we had a most efficient and delicate test of its action on the hollow involuntary muscles in its action on the uterine pains. Dr. Balfour also directed attention to a statement of Stanelli, that bubbles of gas had been seen escaping from the veins and arteries of those operated on under chloroform, and to the possibility, therefore, of chloroform forming gaseous bubbles within the vascular system, interfering with the heart's action, and thus proving a merely

mechanical cause of death. He also pointed out that Dr. Casper, of Berlin, had distinctly made out the possibility of chronic chloroform poisoning, which might end fatally after hours, days, or even weeks; and that this, though a subject of extreme difficulty, was one which deserved most careful consideration, particularly in regard to cases of death after childbirth, in which chloroform had been employed, and where, from the apparent absence of any sufficient cause, the death had usually been referred to toxæmia. In midwifery, we have a most efficient test of the saturation of the patient's system with chloroform in its action on the uterine pains, and as its interference with the continuance of these is a signal for its partial withdrawal, there is, we may almost say, a positive immunity from sudden death from chloroform during labour, because the heart's action continues wholly unaffected long after anæsthetics have produced complete cessation of the labour pains. But the long continuance of labour generally, and the amount of chloroform administered during its continuance, is most favourable to the production of a state of chronic poisoning, particularly where the patient was originally anæmic, or has become so by flooding subsequent to parturition; and in the latter case, the loss of a very small amount of blood, the vital stimulant, might very readily prove fatal where the heart was already half paralyzed. The subject seemed to be one deserving of the most careful consideration.

Remarks were made by various members as to the inconvenience and occasional danger of administering chloroform to patients who had been taking food shortly before; and cases in point were adduced. It had been observed also that the same patient required a larger dose of chloroform after a meal than she did when she was anæsthetized fasting.—*Ed. Med. Journal*, Aug. 1862.

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80. *Tannin as an Antidote to Strychnia.*—Prof. KURZAK gives the following results of experiments made by him upon rabbits and dogs, in which tannin was administered as the antidote to strychnia. He says that when administered in proper time, tannin is an excellent antidote, and the favourable results produced by the experiments on rabbits and dogs give every hope of analogous results upon man.

It is necessary that the dose of tannin be from twenty to twenty-five times that of the strychnia which has been taken; and in cases of poisoning, it would even be prudent to make the dose of tannin much stronger still.

The powder can be immediately employed and obtained by pulverizing nut-galls, and then making an infusion of this latter substance.

An infusion of black tea may be useful when the dose of strychnia is not very great; coffee also possesses the same properties, but in a less degree than tea.

The bark of the oak, which contains 8.5 in 100 of tannic acid, may be rendered serviceable by the facility with which it can be procured; it is also employed pulverized or in decoctions similar to that of nut-galls.

The author mentions besides, acorns, the bark of the chestnut-tree and the willow, the skins of nuts, the root of tormentil, pinks, and snakeweed as rich in tannin.

It is important to avoid the use of vegetable acids whilst administering tannin, on account of the solubility in these acids of the precipitate produced by the tannin in the solutions of strychnia. It is the same with alcoholic drinks. In fact, it is important to avoid every kind of voluntary movement, and all excitement, of whatever nature it may be, these influences being capable of producing spasmodic contractions.—*B. and F. Med-Chir. Rev.*, Oct. 1862, from *Zeitschrift der k. k. Gesellschaft der Aerzte zu Wein*, 1862.

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81. *Detection of Blood Stains.* By Dr. ERDMANN.—The most recent investigations have shown that the crystals of hæmine discovered by Erdmann are the only constant elements of a solid judgment as to the nature of stains of a doubtful nature. There is no question but that blood-globules are characteristic of blood; but as in many cases the stains to be submitted to analysis are not recent, and as the red globules become altered with great facility, their presence cannot serve as an infallible criterion. As to the white corpuscles, Neuhauer has put in its true light the importance which has been recently attempted to be attached to them, by reminding microscopists that precisely similar bodies exist in urine, saliva, mucus, and it may be added in pus. On the other hand, a chemical ex-

amination cannot lead to a satisfactory result, because all the chief principles of blood are met with in other animal fluids, and in addition several vegetable albumenized matters present the same reaction as the albuminous elements of the blood.

Erdmann records a recent case which shows at once the insufficiency of a chemical examination, and the necessity which exists for an extreme reserve in all medico-legal microscopic researches. The only trace of an assassination committed at Leipsic was a brownish stain situated on the spot where the crime had been perpetrated; under the influence of rain this stain had assumed the appearance of coagulated blood. An aqueous solution of this stain furnished a reddish fluid, which gave, with tannin, with ferrocyanide of potassium, and with Millon's solution, the same chemical reaction as the aqueous extract of dried blood. Examined under the microscope, the brown matter was found to contain some corpuscles similar to those of blood. But Erdmann having failed to discover crystals of hæmine, conceived doubts as to the value of the other characters, and repeated with greater care the microscopical examination; he then discovered that the bodies supposed to be blood-globules were the spores of an alga, which has been called the *Porphyridium cruentum* precisely on account of the resemblances of its spores to the globules of the blood.

Erdmann in the course of his subsequent researches has simplified the method of Brücke for obtaining crystals of hæmine, and has reduced it to the following steps: He macerates the suspected stain in water and slowly evaporates the solution; he places this aqueous extract on one of the slips of glass used in microscopic examinations, and adds to it a minute crystal of common salt and a drop of glacial acetic acid; he exposes the slip of glass to a gentle heat over a spirit-lamp and evaporates to dryness; when the glass is cool he adds a drop of acetic acid, and places the whole under a microscope with a magnifying power of 250 diameters. If the stain contained blood, crystals of hæmine will infallibly be seen in the drop of acetic acid; these are rhomboidal plates arranged in groups around a central point; their colour varies according to their thickness from yellow to red; the special character of these crystals is their solubility in caustic potash. Erdmann maintains that by this method he has obtained crystals of hæmine from a stain of blood which could not be seen without a magnifying-glass.—*Gazette Hebdom.* from *Zeitsch. für Analyt. Chemie.*, II. 1862.

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82. *The Hæmine Crystals in different Animals.*—Dr. Wilbrand has endeavoured to determine whether hæmine crystals from the blood of different species of animals can be distinguished by any crystallographic peculiarities. The following are the characteristic differences so far as they have yet been determined:—

The crystals from human blood are lamellar-prismatic; that is to say, the crystals are thin, but relatively broad, the length being only from one and a half to three times the breadth. The crystals from the blood of the ox and the mouse are elongated-prismatic, being from six to ten times as long as broad. The blood of the ox and the mouse may, however, be distinguished from one another by the arrangement of the crystals. The first forms the model of a hexagonal axis-cross or parts of it; the latter of a monoklinometric cross or parts thereof. Accordingly, in the blood of the ox we find six-rayed stars formed from three crystals which intersect one another in a plane under sixty degrees. Such stars are not found in the blood of the mouse; but two forms of cross found in it are specific—rectangular crosses formed from two crystals which present their narrow margins; and oblique crosses, the acute angles of which amount to rather more than two-thirds of a right angle. In addition to these kinds of blood, Wilbrand experimented on that of the sheep and the pig, but failed to find characteristic differences. The characters of the hæmine crystals from the blood of man, the ox, and the mouse, serve merely to distinguish them from those from the sheep and the pig.—*Ed. Med. Journ.*, Oct. 1862, from *Vierteljahrschrift für die praktische Heilkunde.*

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83. *Poisoning by Nitrate of Strychnia, Acetate of Morphia, Bitter-Almond Water, and Chloroform.* By Dr. Tschepke.—On the 26th of November, a little before eleven in the evening, Dr. Tschepke was summoned to see E., a druggist's

assistant, who had voluntarily poisoned himself. He was found in bed, pale, the eyes closed, stiff as a corpse. One of those present showed a phial containing nitrate of strychnia, which the young man had employed. Dr. Tschepke took hold of the hand in order to feel the pulse; immediately on this simple contact the body was affected as if by an electric shock; the pulse became scarcely perceptible; the respiration was suspended. At the end of a few minutes the patient opened his eyes, and, in reply to a question, stated that he had taken strychnia. Whilst an emetic, consisting of antimony and ipecacuanha, was being prepared, spontaneous vomiting occurred of a reddish matter, having the smell of bitter almonds. The emetic was administered, and a solution containing three grains of tannin in each dose was prescribed. The emetic produced two copious discharges, after which E. scratched his face and body violently, and tore his hair; then supervened starting, clonic convulsions, tetanic rigidity, opisthotonos, and suspension of the pulse and of the respiration. Touching the arm produced, at first, a fresh attack. The tannic acid and the emetic were given every alternate quarter of an hour. Vomiting and cramps succeeded one another; the same train of symptoms recurred. At the end of an hour the patient was able to speak, and stated that he had first taken strychnia, then acetate of morphia, each of these substances in an ounce of bitter-almond water, and that he had poured on his pillow a certain quantity of chloroform.

Half an hour after midnight the use of the emetic was discontinued, and three grains of tannic acid, with a quarter of a grain of codeine, were given every half hour. Occasional vomiting and cramps recurred until four o'clock in the morning. There was still great anxiety, feebleness, and dryness of the throat; the respiration was short and hurried. To allay his thirst, he was ordered milk of almonds, milk, tea, and finally seltzer water. Urination was painful.

In the morning the patient was sufficiently recovered to narrate what had taken place. At half-past eight o'clock he had taken between eight and ten grains of the nitrate of strychnia in an ounce of bitter-almond water. A little later he swallowed an additional dose of twelve grains of strychnia. Feeling nothing particular, he took at nine o'clock ten grains of acetate of morphia dissolved in an ounce of bitter-almond water, and then lay down in bed. Ten minutes later he recollected that he had some chloroform; he poured some of it on his pillow to hasten his death. It appears that he was insensible for an instant, and then felt in the nose and the limbs an intolerable itching. Feeling no effect from the poison, he wished to get up to look at his watch, but was unable to do so. He remained in a state of partial insensibility till the arrival of a fellow-assistant at about a quarter to eleven. He heard him enter; and as the latter was leaving the room to get assistance, he was seized with violent cramp, with cessation of the respiration, but without pain. He then lost consciousness, but only for a short time; and when he came to himself, had another attack of convulsions. At this moment the physician entered, and made the observations already noted. Two days afterwards no trace of the poisoning remained.

The various symptoms in this remarkable case may be referred to the different poisons. To the strychnia must be referred the cramps, the violent movements of the body on the slightest touch, and the phenomena of asphyxia. To the morphia belongs the itching of the nose, of the limbs, and, later, of the whole body. The bitter-almond water and the chloroform appear to have produced no special effect.

We may well be surprised that such large doses of strychnia did not cause death; but this is to be accounted for by the following circumstances: The young man, before poisoning himself, had partaken freely of a sort of soup made with flour and a species of cranberries. These latter contain tannin, an agent which neutralizes strychnia; and the farinaceous matters, by enveloping the poison, had prevented its absorption.

On the other hand, opium has been found to be an antidote to strychnia; so that the mixture of poisons which the poor creature had taken to hasten his death had had precisely the opposite effect. It is right to add that the emetics, continued without interruption during several hours, no doubt had a considerable effect in bringing about this fortunate result.—*Ed. Med. Journ.*, Oct. 1862, from *Gaz. Méd. de Paris* and *Deutsche Klinik*.

84. *Poisoning by Sulphuric Acid.* By Antonio Cozzi.—This interesting monograph is founded upon the study of twelve cases of poisoning by sulphuric acid observed by the author at the Hospital of Santa-Maria-Nuova, at Florence, between the month of February, 1852, and January, 1861. With one exception, all the poisonings were the result of attempts at suicide. The analysis of these observations has led Cozzi to the following conclusions regarding the objective and subjective symptoms which follow the ingestion of the poison:—

1. The fluids discharged by vomiting are generally as black as ink; in some cases they have been sanguinolent.

2. It sometimes happens that the phenomena of spasm and irritation, determined by the caustic substance, predominate at first in the situation of the pharynx, and that epigastric pain only comes on later; under these circumstances death occurs suddenly, before anything causes the physician to suspect its imminence.

3. Entering the larynx and bronchi, the sulphuric acid may develop a fatal inflammation, and determine grave disorders in the organ of voice. The penetration of the acid into the air-passages is due to the instantaneous impression which it produces upon the tongue; the spasmodic contraction of the pharynx prevents deglutition, at the same moment an access of cough occurs, and in the succeeding inspirations the liquid falls into the trachea and bronchi, and may even enter the lung.

4. When the degree of concentration and the dose of acid swallowed are sufficient, an immediate perforation of the stomach may take place; in this vomiting and diarrhœa are absent. In this case also the swallowing of liquids increases the pain; the pulse becomes thready, the prostration is complete, the limbs are covered with a cold sweat, and death occurs in a few hours, the patient retaining consciousness to the last.

5. If the acid is weak and much diluted, the general symptoms are at first less severe, the local accidents predominate, but may themselves present a slight remission; but an inflammatory reaction soon sets in which carries off the patient. In other cases, nervous symptoms and grave disorders of the assimilation manifest themselves; the patient cannot regain strength, and after prolonged suffering he expires, either from a chronic gastro-enteritis, from ulceration of the stomach, or from stricture of the œsophagus or of some other part of the digestive tube.

6. Sulphate of indigo probably possesses toxic properties as intense as those of pure sulphuric acid.—*Gazette Hebdomadaire* from *La Sperimentale.*

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85. *Poisoning by Bitter Almonds, with Iodide of Iron.*—M. Toscani administered, as a tonic, the syrup of iodide of iron to a child about six years old, with great success. While under this treatment, in opposition to repeated warnings, a person gave to this child two bon-bons containing essence of bitter almonds. One hour afterwards the mother gave a teaspoonful of the syrup of the iodide. At the end of another hour, intense cardialgia and faintness succeeded each other at short intervals for three hours. In a moment of rest a little soup was given which brought on vomiting, with relief. Recovery took place in five hours. The writer of the above case remarks, that all preparations containing hydrocyanic acid should be taken with great care whenever salts of iron or mercury are being administered, as they form with these poisonous compounds of extreme activity. Hence, mixtures containing calomel and bitter almonds are peculiarly dangerous.—*B. and F. Med.-Chir. Rev.*, Oct. 1862, from *Bullet. delle Sci. Med. di Bologna*, March, 1862.

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86. *Case of Rape during Sleep.*—The following case, tried at Dumfries Court, on the 26th Sept., 1862, before the Hon. Lords Cowan and Neaves, throws light upon a vexed question of medical jurisprudence, whether it be possible to commit rape upon a woman while asleep?

The prisoner, William M'Ewan or Palmer, was placed at the bar charged with the crime of wickedly and feloniously having carnal knowledge of a woman when asleep, and without her consent, by a man not her husband.

The prisoner plead not guilty.

The following is the material part of the evidence:—

Mrs. M. I have been married sixteen years, and have three of a family. My husband keeps a hotel, of which he is also proprietor. My husband and I, and two of our children, sleep in a private room communicating by one door with the kitchen, and by another with the bar. One of the children sleeps in my own bed, and the other in a small folding-down bed. This small bed is near the fireplace, where there is a gas bracket. The prisoner has been eight or nine years in our service as horsekeeper and ostler—he did not sleep in the house, but slept out.

On the night of 2d May last, a policeman drove to the door with a prisoner about half past ten or eleven o'clock. I was told that he had gone to the prison with the prisoner and was coming back. The servants were all to bed; they sleep up stairs. It was arranged that I was to wait up for the constable. I went into my own room, and lay down upon the little bed near the fireplace. I had been up all night on the previous night, and had been much fatigued during the week before. My husband was at this time sitting at the fire reading the papers. He was to go to bed after he was done with the papers. I fell asleep, and was very sound asleep. I lay down with all my clothes on. I was dressed much the same as usual; lay down on my left side. The door was on my right. The little bed was at the other end of the room from the door into the kitchen. I felt the pressure of a man, and thinking it was my husband, I raised myself up. It was that blackguard—I mean the prisoner. He was lying upon me, and when I rose up he drew himself away. My clothes I found folded up, and the lower part of my person was exposed. It was his weight that awoke me. He withdrew himself when I awoke. I was then lying more upon my back. When I awoke, his body was in contact with my person. His private member was in my private parts. I felt him withdraw it from them. In doing so, I felt a discharge from him in my person, and all about on my clothes. The gas was at this time very low; when I lay down it was high. There was a complete mess on my clothes. I immediately called out for him to go away for a dirty, filthy, blackguard. As he went away, he was buttoning up the front part of his trousers. The prisoner said as he went away, to say nothing about it; the policeman is waiting for his money—to cash this account for him. The police often, when they came late at night, got payment from me of their accounts, and I got payment afterwards from the authorities. I rose to my feet in a moment; prisoner went sideways towards the kitchen. My husband awoke. I still cried out to prisoner to go away. I told my husband about prisoner. He got up and had him taken away. I was greatly agitated. Husband got the constable to take prisoner in charge. The prisoner said, I've done it, and I'm sorry for it—he was then in the kitchen. My husband went with the constable to take prisoner to prison. When he came back I told him everything. This was a little after twelve o'clock, about a half or three-quarters of an hour after the prisoner did it. There was light enough to let me see prisoner. There is no doubt as to the man. The prisoner never before came into my room without knocking. I was on no terms of intimacy or particular acquaintance with him. The prisoner was rough and coarse in his language, but a good enough servant otherwise. He did all this without encouragement from me at any time, and entirely without my consent. When I went into my room to lie down, the prisoner was in the kitchen. I suffered from the effects of this for a long time. I was much distressed, and have been kept from sleeping by it. I might have slept for half or three-quarters of an hour before it was done. When I lay down, my dress was quite in its proper state.

The husband's testimony corroborated his wife's, and he stated that he was quite sure his wife was sound asleep when he went to bed.

In his declaration, the prisoner admitted having gone into the room, and having raised Mrs. M.'s petticoats, and placed his hand upon her person, but denied anything further.

The jury unanimously found the prisoner guilty as libelled, and he received sentence of ten years' penal servitude.—Condensed from *Edinburgh Med. Journ.*, Dec. 1862.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Abdominal Carcinoma resulting in Artificial Anus in the Upper Third of the Ileum. By D. LEASURE, M. D., of New Castle, Pa.—On the 18th of December, 1857, I was called to I. W., bricklayer, aged 43. He informed me that his health had been declining for three or four years; that during a sojourn at the mines in California, six years ago, he was greatly exposed to vicissitudes of weather, with little or no protection, and that a violent sickness ensued, from which he never entirely recovered. Since his return, four years since, he has been troubled with obscure dull pains in his abdomen, with a sense of weight and dragging in his back, which have gone on increasing in intensity, and within the last year sharp lancinating pains have been added to his sufferings, but there has been no diminution of the dull dragging pain, which he describes "as rather a sense of suffering from some internal weight producing inward weariness, than a real pain." His bowels have been obstinately costive, though cathartics would always give temporary relief, to be followed with the same state of constipation as soon as they ceased to operate. His appetite is not good, though he eats with a sufficient relish, and there is no disposition to intolerance of food, nor any nausea. His kidneys are not very active, and there is a good deal of sediment in the urine, which, on examination under the microscope, proves to consist largely of the triple phosphate of lime, and the phosphate of ammonia, with a debris of broken blood globules and disorganized tissues, the precise character of which I am not able to determine, though from the presence of imperfect sections of tubes I infer that it is probably from a kidney, at least in part. He informed me that some ten months since he observed that there was a tumour in his left side, which has rapidly increased in size. On examination, I found a tumour distinctly lobulated and very firm, occupying about one-third of the left sides of the umbilical and hypogastric, and nearly all of the left lumbar and iliac regions. The tumour seemed to have its greatest prominence, about the intersecting point of the dividing lines of these regions, where it was very prominent and quite hard, as if one of the lobes had been thrust forward at that point. There was no tenderness on pressure, and the tumour seemed to be firmly attached, so as to admit of but little motion. The general appearance of the patient was that of a man labouring under a general cachexia, but with no distinct well marked characteristics to determine precisely the nature of the primary mischief. Was this merely a case of general mesenteric disease, with great enlargement of the mesenteric glands, attended possibly by impacted colon, or was it carcinoma? I gave the patient the benefit of the more favourable diagnosis, and completely evacuated the canal by free laxatives, and very copious enemata, with the effect of bringing away about half a gallon of hardened and apparently old scybalæ. The tumour, however, was but little diminished in size, and its outlines could be more distinctly made out. I put him on the use of an iodo-ferruginous medication with no benefit at all, and the case seeming to progress rapidly, with an evident tendency on the part of the tumour to point, as though pushing its way to the surface, I abandoned all treatment, and left the case to nature for some weeks.

About the first of February succeeding, the lancinating pains became insupportable, especially at night, and I was obliged to put him on the use of opiates, which were finally pushed to the extent of an ounce of McMunn's elixir per diem. The tumour still pressed towards the surface, the skin over it became inflamed, and on the 26th of February, finding that there was distinct fluctuation, and an evident disposition on the part of the skin to form a large slough, I passed a small trocar obliquely into the soft portion of the tumour, so as to merely pass through the skin and cellular tissue into the cavity of the abscess, without penetrating to the interior of the abdomen. On withdrawing the trocar, about four tablespoonfuls of pus, and a strong jet of gas escaped through the canula. The canula was withdrawn, and a bread and water poultice laid over the part, and the puncture closed over in two days without any further discharge.

I examined the pus under the microscope, as did also, at my request, Dr. S. M. Hamilton, but we detected nothing that might not have been found in an ordinary abscess. On the 10th of March the tumour again pointed, and on the 12th it opened spontaneously at the seat of the old puncture, and after discharging pus for three or four days, the contents of the bowel passed through, and as substances eaten only a short time before passed out at the opening undigested, we had the unpalatable truth forced upon us, that we had to deal with an artificial anus high up in the ilium. From this period, he had no discharge at all from the anus proper, or lower bowel, until at the end of the fifth week he had a small discharge, of which he partially relieved himself with his fingers, but on throwing up a syringe full of warm soap suds, the bowel was emptied without much trouble, and then about every third or fourth day there would be a similar discharge, but it appeared to consist almost entirely, if not altogether, of the secretions of the bowel itself. From this time, also, till the 30th of April, the patient lingered in great suffering, though the tumour did not seem to develope itself anteriorly, and on that day I again punctured the integuments low down in the left iliac region, over a large sac of pus, where it was evident a slough was about to separate unless I did, and after the discharge of about half a pint of pus the contents of the bowel were forcibly ejected, and another artificial anus was established. At this time he was extremely emaciated and harassed with violent paroxysms of coughing. Circulation and innervation have been but little disturbed up to this time, but now he was evidently sinking, and the pulse run up to about one hundred. His intellection was not disturbed even by his large opiates up to within a few hours of his death, which took place on the 4th of May.

Autopsy eighteen hours after death in the presence of Drs. Cossit, Cowden, White, and Peebles. On making the necessary incisions, and deflecting the skin over the left iliac region, a large cavity was exposed partly filled with pus, and the debris of broken-down cellular tissue. Two small apertures opened from this into the intestine, through which the contents of the bowel escaped, on pressure of the abdomen. I now undertook to separate the abdominal fascia from the muscles, but found it almost impossible; for so completely were the parts blended in one common mass, as to form an apparently new tissue, as into this mass the peritoneum had also been forced to enter, and I was obliged to deflect all the abdominal coverings together, in which I could only succeed with much difficulty, for the convolutions of the intestines were firmly agglutinated to each other, and also to the peritoneum, and it was in these extensive adhesions that the two apertures existed communicating between the inner surface of the bowel and the surface of the skin constituting the artificial ani. Having entirely ex-

posed the cavity of the abdomen, it was found to contain several pints of a light coloured whey like fluid: and a large and firm tumour occupying the entire left side of the abdomen in its whole length, and including in itself the duodenum, jejunum, and about one-third of the ileum, with the transverse and descending arches of the colon, and their attached mesentery. The substance of the tumour, aside from the natural parts contained in it, was an immense lobulated scirrhus. On carefully dissecting the tumour, it was found that while the scirrhus enveloped completely the portions of the bowel passing through its substance, it did not diminish or sensibly encroach upon the natural dimensions or calibre of the gut, but so encased it, as to render any considerable amount of peristaltic motion next to impossible; this portion of the intestine was quite full of the ordinary half digested ingesta above the artificial anus, and below it contained only the products of elimination and some gas. The lower two-thirds of the ileum, the caput cæcum, and ascending arch of the colon were not in any way implicated.

The substance of the tumour presented carcinoma in all its stages of scirrhus and cephaloma. The scirrhous portions varied from a series of light straw-coloured tumours, of various sizes, to the firm, hard, gray, and gristly tumours as large as goose eggs. Many parts of the encephaloid portions presented the appearance of broken-down and crumbled cheese, and these seemed to be enlarged mesenteric glands, and formed the principal distinct lobes of the tumour. On examining carefully the seat of the openings in the ileum, I found that one of these lobes had softened, and taken on ulcerative action, which extended itself in all directions equally, and a convolution of the ileum being in its way, it was opened on its anterior surface, and the contents were admitted into the cavity filled with matter from the softened mass. The extensive adhesions and agglutinations of the parts to the anterior wall of the abdomen preventing any escape into the peritoneal cavity, the accumulating matter was thus directed to the surface where it finally escaped. The right kidney seemed healthy enough, but the left was so surrounded by, and pressed upon, the dense substance that it was reduced in size fully one-half, but did not appear to be in the least affected with the invasion of cancerous deposit. No part of the intestinal canal presented any traces of disease, save where the opening occurred in the ileum, and there was but one opening in the ileum, the size of a dime, and both the openings through the integuments communicated with it, the pus having dissected its way under the fascia of the abdomen, and pointed at two places. The stomach was entirely free from disease, as were also the liver, spleen, and pancreas. But it was in the mesentery that the disease seemed to have had its chief seat and development.

The whole of the mesentery, connected with that portion of the bowel implicated, was a mass of carcinomatous matter, but the portion of mesentery attached to the healthy intestine was itself healthy. In the diseased portion of the mesentery, the deposit or development of the cancerous matter was chiefly between the folds of the peritoneum, which were distended, or rather separated from each other, until the peritoneum was thrust away from the posterior wall of the abdomen over the spine and on its left side, and also deflected from the intestines themselves, until only about one-third, and that of course the anterior surface of the bowel, had any peritoneal covering at all. A great number of tumours were found along the whole course of the spine, where the peritoneum had been pushed forward by their growth.

The surface of the peritoneum was entirely free from any deposit, and where the main body of the tumour was in contact with the anterior wall

of the abdomen, the peritoneum seemed merged in a common blending of all the tissues, and, perhaps, in some places, lost by absorption or ulceration, but not to any appreciable extent the seat of deposit.

Death during Convalescence in Typhoid Fever from over-eating. By JAS. L. ORD, M. D., of Santa Barbara, California.

CASE 1.—A young man aged 20, a native Californian, had a severe attack of typhoid fever of about six weeks' duration. By giving several times a day large doses of quinia, with calomel gr. x, and tart. antim. gr. j, every third or fourth day, he recovered so far as to be able to walk about the house; although very weak, still taking tonics. Charged his attendants to give him a small allowance of digestible food with a glass of wine at a meal, four times daily, which was strictly obeyed for a short time. One day he complained to his mother of not having enough to eat, and begged her to give him as much as he could eat at one time. She very naturally assented, and cooked for him a large dish of dried codfish and potatoes mixed with eggs and fried in fat, of which he ate very plentifully. This was in the afternoon. Next morning I was sent for in a great hurry, and was informed by the messenger that my patient was dying—that he had been vomiting for several hours, and that if I did not hurry he would be dead before I reached him. Sure enough, when I arrived I found him in *articulo mortis*. No post-mortem examination was made.

CASE 2.—A young man aged 25, a native Californian, was sick several weeks with typhoid fever. Got so well that he walked about the house, and sometimes would visit the nearest neighbours, yet quite feeble and taking tonics. He was told to restrain himself from eating too much at a time, and to eat such food as he could digest easily. His appetite was ravenous, and he often complained of not eating sufficient to satisfy his hunger. One afternoon he visited a friend near by, and was induced to remain for supper. His host told him, very imprudently, not to starve himself, but to eat as much as he wanted; that he would soon be well, and never mind what the doctor said. He did eat plentifully of the supper, such as it was—roast beef and fried beans. The consequence was that he brought on enteritis, and in forty-eight hours he was a corpse.

DOMESTIC SUMMARY.

Ligation of the Subclavian Artery.—Dr. H. N. BENNETT relates (*Am. Med. Times*, Dec. 27, 1862) the following. A man 20 years of age, while playing with a lad, was accidentally stabbed with a long narrow knife, the point of which entered upon the posterior and outer face of the left arm, a short distance above the insertion of the deltoid, passing directly upwards and inwards, a distance of at least three inches, the edge of the knife being turned towards and running close upon the bone. My friend, Dr. James Baldwin, of Stratford, was immediately called, as the hemorrhage was profuse. Upon his arrival the patient was already faint from loss of blood, and it was not difficult at this time to arrest the bleeding. A roller was very judiciously applied the whole length of the limb, and a firm compress over the wound. This precaution was taken as the blood appeared to be arterial, and Dr. Baldwin is quite positive that at this time there was no pulsation in the radial artery, leading him to suspect that this vessel was wounded. The hemorrhage remained quiescent several days, when it again broke out with renewed force, and unmistakably arterial. At this stage of the case I first saw the patient. The whole limb was now swollen, the arm being to a considerable extent infiltrated with blood, while the

forearm and hand were œdematous. I proposed, before resorting to operative procedures, to try the application of persulphate of iron, which was approved by the attending physician, and the wound was filled with this powerful styptic —compression being continued as before. The hemorrhage has now another period of quiescence, and the swelling of the limb materially lessened, but upon the eighth day after the application of the styptic, bleeding again commenced, with still greater violence, and was with much difficulty arrested by compression. The limb immediately swelled again, and the œdema of the forearm and hand was greater than before. The patient was now suffering the constitutional effects of loss of blood—his face was blanched, his appetite poor, and his pulse frequent and feeble. I believed it high time to secure the patient from further hemorrhage, if possible, and with this view proposed to ligate the subclavian artery. An attempt to tie the wounded vessel by following the incision (only three-fourths of an inch in width), would involve the muscles of the arm to an unwarrantable extent, and perhaps also important nerves. It was quite uncertain as to what artery had been severed or *wounded*, and the anastomoses about the shoulder being quite free, I believed the ligation of the subclavian to be the most judicious method of treatment. I was not aware, either theoretically or *practically*, that the ligation of arteries at a distance from the seat of the wound, sometimes fails, the hemorrhage returning after a longer or shorter period; but this fact seemed to me to indicate the tying of the artery at that point which would most effectually restrain the circulation.

I proceeded to the operation (Oct. 12, 1862), assisted by Dr. Baldwin. No details are necessary, as the vessel was tied in the usual manner and place, just without the scaleni muscles. The infiltration of blood and the œdema disappeared almost entirely within forty-eight hours, and the temperature of the limb was easily maintained by an envelope of flannel. The ligature came off on the thirteenth day, the operative incision being nearly healed. The original wound also began to cicatrize, and was firmly closed at the end of three weeks after the operation. No pulsation is yet visible in the radial or ulnar arteries, although the man is in good health, and pursuing his ordinary avocation.

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Vinegar as an Anti-Scorbutic.—Dr. Alex. McBride, Surgeon 40th Reg. O. V. I., states (*Cincinnati Lancet and Observer*, July, 1862), that he has employed vinegar with great benefit in scurvy.

His field of duty was chiefly with the 40th Reg. O. V. I. "In January, and the first days of February," he says, "the regiment was encamped at Camp Buell; a muddier, wetter, and gloomier place than which probably never existed. When I found that to procure potatoes, cabbage, citric acid, etc., was impossible, while the exciting causes and the primary symptoms of scorbutus were rampant, the prospect before me was *horrible* for the suffering and death which must follow."

In this emergency it occurred to him to use vinegar, of which there was an abundance and of good quality in the commissary department. He "immediately recommended and urged its free and abundant use, and found that it was well relished by every man, both those on the sick list and those on duty. The men were surprised to find themselves so fond of vinegar. I made free use of it, diluted with water, as a common drink in the hospital in *all cases of disease* where the patient had a relish for it, as well in diarrhœa and dysentery as in common continued fever and debility. The constant thirst which had been such a harassing difficulty, disappeared, and dry and parched mouths were by no means so common afterwards. The diarrhœa so difficult to control was improved in every case. The indication in every case for giving the vinegar, was the *relish* for it. Thus had I a remedy, and from this time forth the diathesis changed, although there was no other change in the quality of the rations.

"About a month later, it became my duty to prescribe in other regiments of the brigade, whose circumstances had been identical with those of the fortieth, except the vinegar. The difference of their health was striking; the fortieth had about fifty per cent. more men fit for duty than either of the other regiments. I procured what vegetables I could, but the quantity was insignificant most of the time."

It makes little difference how the vinegar is got into the stomach, Dr. McB. says, "whether as a drink diluted with water, with or without sugar, or mixed with various articles of food. I directed our men to add it to their bean-soup and to their boiled hominy; also, to sop their bread in it, sweetened or not, according to taste or notion. Sugar is not injurious, but, I think, rather beneficial to its effect. A very nice pie can be made by soaking broken bits of cracker in vinegar, then adding sugar and spices, precisely as in making apple pie. This is as easy made as apple pie, and eaten in the dark would pass anywhere for a fruit pie.

"Another form: I sweeten good vinegar to taste; then stir in flour or common starch in small quantity, and bake as a custard or pumpkin pie."

[No fact in therapeutics is better established than the anti-scorbutic properties of vinegar, and the article is always supplied to ships on long voyages with that view; nevertheless the observations of Dr. McB. are useful as calling attention to the article especially in the scorbutic condition into which armies in the field are apt to fall where proper hygienic precautions are not observed.]

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Oakum as a Substitute for Lint in Gunshot and other Suppurating Wounds.—In our previous No. (pp. 566–67) we noticed the commendatory remarks of Dr. Sayre on the use of oakum as a substitute for lint, and the grounds for this preference. Our experienced friend, Dr. W. S. W. RUSCHENBERGER, dissents from the conclusions of Dr. S., and, in a recent No. (Oct. 9, 1862) of the *Boston Med. and Surg. Journal*, he gives some good reasons for his dissent.

"In order," he says, "to obtain an idea of the comparative absorbent power or capillary force of oakum, cotton, lint, and tow, small parcels of these articles, of ascertained weight and dimensions, were gently placed on the surface of water in a basin, and carefully weighed again after removal. The weight of water absorbed by each, thus ascertained, is stated in the following table:—

	Weight.	Dimensions.	Time in contact with water.	Weight of water absorbed.
Cotton (wool) . .	40 grs.	3 in. diam.	1 hour 10 min.	8 grs. = 1-5
Oakum	"	2½ "	" "	10 " = ¼
Tow (from hemp) .	"	2½ "	" "	250 " = 6.25 times
Coarse lint (shoddy)	"	2½ "	1 minute	280 " = 7 "
Scraped lint . . .	"	2½ "	Instantly	298 " = 7.45 "
Patent lint . . .	"	1¼ by 3 in.	4 minutes	299 " = 7.47 "

"Forty grains of cotton submerged and slightly squeezed under water for a few seconds, was found to retain, without dripping, 270 grains; and an equal weight of oakum treated in the same manner, only 94 grains of water. The oakum retained little more than twice its weight, and the cotton nearly seven times its weight of water.

"The inference from these experiments is that the capillary force of patent lint is nearly thirty times, and that of tow twenty-five times, greater than oakum; and the capillary force of oakum is only one-fifth greater than that of cotton. Oakum absorbed one-fourth, and cotton one-fifth, of its weight; but tow 6.25 times, coarse lint 7 times, scraped lint 7.45 times, and patent lint 7.47 times, its weight of water.

"If the property of capillarity alone is to determine the choice of tissue or substance for covering suppurating wounds, any description of lint or tow is to be preferred to oakum.

"Tow has been long employed as an outside dressing or recipient of profuse discharges; and also as a swab in cleansing offensive suppurating wounds, where sponge was not sufficiently abundant to be expended in this way. The objection to tow is, that there are apt to be sharp or hard spiculæ adhering amongst its fibres, which give pain when brought against a sensitive surface; but this objection may be obviated by carefully selecting and carding the substance. A better substitute for sponge for cleansing purposes in surgery is cotton wool, which, saturated with soapsuds, or simply with tepid water, and held in a dressing for-

ceps, forms an admirably soft application that may be used where the finest sponge would be found by the patient rough and harsh. Indeed, considerations of cleanliness and of avoiding the diffusion of morbific matters from patient to patient, suggest that sponge used once as a detergent implement should not be used in the case of any other individual, and not too often on the same person. Cotton or tow forms a detergent implement so cheap that it may be renewed at every dressing, and ought to be substituted for sponge, without any reference to cost, for cleansing purposes.

"It is said that cotton or lint placed over a suppurating wound serves to *prevent* the escape of pus, and that oakum should be substituted. But it seems that oakum as well as lint may block the way and hinder the flow of the escaping liquids, if not removed when saturated. Then why should a copiously discharging wound be enveloped in any capillary material? Why not permit the discharge to flow without impediment of any kind? Any contrivance which would keep the wounded part at a normal temperature, whether in the form of oiled silk, or other tissue not readily permeated by moisture, or in shape of a simple veil or shield from flies in hot weather, might prove more salutary than the effects of a bunch or pledget of wiry oakum secured over it by bandage or otherwise.

"Supposing that oakum possesses all the qualities claimed for it in the instances specified, it cannot be regarded as a substitute for patent lint, because there is often necessity for just such a pliant tissue to serve as the vehicle in the application of ointments to morbid surfaces—such as blisters, for example.

"Substitutes are almost always defective expedients. Whether they are adopted from parsimony, poverty, or other reason, they rarely satisfy the requirements they are employed to meet. The workman who uses implements in all respects adapted to his vocation produces more perfect results than he who labours with a paucity of tools, and hence, driven to expedients, is compelled to require from his awl the work of a gimlet.

"Oakum is, doubtless, applicable as a substitute to some ends. It may answer as an external dressing, a mere recipient of liquid discharges; but for such purposes, as it costs much more and has less capillarity, it is a poor substitute for tow. Its application to the uses to which patent lint is especially adapted could be suggested only where no soft tissue is procurable. Canton flannel would answer the place of patent lint better than oakum; but, comparing their adaptability to the object in view, the propriety of substituting Canton flannel, at thirty-five cents the square yard, for patent lint, while this is procurable at forty cents, does not commend itself to notice."

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Croup—Tracheotomy—Fatal Result.—Dr. Jacobi presented to the New York Pathological Society (Sept. 10, 1862) the respiratory organs of a child two years of age, who died ten o'clock of the night before of croup. He related the following history of the case: I first saw the child in consultation last Friday morning. He had been suffering for about ten or twelve days from nasal and laryngeal catarrh, and when the attending physician was called, twenty-four hours before I saw the child, there were well established symptoms of croup. Not only was there more or less occlusion of the larynx, but also diphtheritic membranes covering the tonsils and the adjoining parts of the pharynx. The physician made use of the usual remedies, but the symptoms grew more and more grave every hour, and when I was summoned suffocation seemed so imminent that I thought it best to resort to tracheotomy at once. The operation was performed in the usual way, with the exception that the incision into the trachea was made through the thyroid body. The hemorrhage which followed this procedure was very much less than I expected it would be.

The operation under the circumstances was considered justifiable, inasmuch as I could not make out there was any pneumonia present. About twenty minutes after the operation the child breathed pretty well, and pulse ranged from 135 to 140 per minute. The pulse increased in frequency until the afternoon when it was about 150. The child then took a little of Horwood's tinct. of veratrum viride, a drop every two hours, and the following morning appeared evidently better, there being no positive symptoms of bronchitis present. During

that afternoon there was a sudden collapse. The use of stimulants and quinine soon reduced the pulse from 190 to its former frequency, and gave us some hope for a recovery. On the morning of the third day, however, symptoms of suffocation began to show themselves, and the child would throw out from time to time hard shreds of mucous membrane with a temporary relief of the symptoms. The percussion sound was normal and clear posteriorly, but somewhat duller than usual anteriorly. The symptoms of suffocation gradually grew more and more manifest, and the child died last evening in about the same condition as he would have died from the first attack of croup. I have to state that one of the attempts to cure consisted in introducing a pretty strong solution of nitrate of silver. This was done day before yesterday at intervals of thirty-six and twelve hours before death. After the first attempt the child's breathing seemed to be less embarrassed, especially after some of the shreds of membrane were torn out by the feather containing the solution.

A portion of the larynx, pharynx, and trachea were then exhibited. Portions of the tonsils and the whole larynx were covered with pseudo-membranes, which did not show any disposition to separate. The wound made by the operation was so covered by this membrane above and below that the process of healing had progressed very slowly. The evidences of tracheitis were very well marked. The membranous shreds could be traced down as far as the bifurcation of the bronchial tubes. The lungs were healthy, with the exception that on the left side there were pleuritic adhesions and several marks of pulmonary apoplexy.—*Am. Med. Times*, Dec. 20, 1862.

Black Calculus from the Kidney.—Dr. WHITE read before the Boston Society for Medical Improvement (Sept. 22) the following report of an analysis of a black calculus which was shown, lying in the kidney, by Dr. J. Wyman, at a former meeting. Shape, obtuse almond. Weight, 40 grains. Length, 10 lines. Width, 6 lines. Thickness, 4 lines.

Its surface is almost wholly covered with well-marked, conical papillæ and crystalline projections, and is of an intensely black colour, with the exception of two small, deltoid-shaped portions. These are of a yellowish-white colour, and are situated upon one of the flat surfaces, their acute angles nearly meeting in the centre, and forming a depressed girdle, by which constriction the stone was tightly held within the sac, from which it only half projected, and was with difficulty removed. The black substance is hard, shiny in places, and not easily detached. It is deposited in a uniform layer, nowhere exceeding one-third of a line in thickness.

Portions of this matter, examined by the microscope, were found to be so deeply coloured as to possess no transparency. Treated with concentrated *acetic* and *sulphuric* acids they remained entirely unchanged. *Hydrochloric* acid appeared to have no other effect upon them than to extract a little oxalate of lime, which forms the principal part of the substratum, upon which the colouring matter rests. In *alcohol* and *ammonia* alike unaffected. Boiled with a strong solution of *potash*, the liquid assumed a brown colour, which on cooling deposited an amorphous, dark-coloured matter, and became colourless again. The fragments thus treated were changed to a deep yellowish-brown, and exhibited a concentric, lamellated structure, some of the layers representing circles of small diameter. *Nitric acid*, concentrated, produced a brisk effervescence, and very gradually destroyed the black colouring matter, leaving behind an orange-tinted, uniform tissue, of the original shape and size. After spontaneous evaporation various crystalline forms were observed, some of which were of a yellow colour, but in too small quantity to admit a satisfactory examination. A careful analysis was made of as much of the black matter as it was thought well to remove, for iron, but the most delicate tests failed to discover its presence.

What, then, is this peculiar substance? It might at first be taken for hæmatine or some of its modifications, perhaps melanine; but all the blood pigments, as is well known, contain iron, and not a trace of this metal was discoverable in the portion examined, nor do the results of the above tests at all agree with the ordinary reactions of such substances. It would be a very interesting point, moreover, to determine whether the patient ever was affected with hæmaturia,

and even if he had been, it seems impossible that so black a pigment could be formed from the coagulation of blood. Whether we are dealing with simple colouring matter, accidentally mixed with some fibrinous or albuminoid substance, which forms the chief proportion of the layer, as shown by the experiments given, or whether the two are *one* unknown body, it is impossible to decide with the small amount of material at command. The latter, however, seems by far the more probable, for I have never seen, nor heard of, a similar substance of any colour as a constituent of a urinary calculus.

If, then, we give up the blood as the origin of its formation, can we turn to the urine more hopefully for a solution? I believe not, if we limit its resources to the production of the colouring matters already known, and as exhibited in normal or abnormal conditions; for it has no resemblance to urophæin, uroxanthin, or uroerythrin. Moreover, the darkest known pigments the urine is capable of producing, are those imparted to crystals of uric acid, and those which colour certain oxalate of lime calculi; but neither of them even approach in intensity the unique specimen now before us. The results of our analysis, therefore, are negative only, and with such we must rest satisfied, for perhaps nothing more definite would result from the employment and destruction of the entire specimen.

Coating the surfaces of the triangular facets, which were protected from the deposition of pigment by contact with the lips of the sac, is a layer of yellowish-white material, composed chiefly of organic matter. By the microscope, large masses of round cells are seen, filled with a fluid, colourless fat, and encrusted with *carbonate of lime*. On the addition of any fluid, the cell walls burst, and allow the fat in large quantities to float away. When treated with acid, thin, membranous flakes are observed, which, with the aggregation of fat cells, are undoubtedly portions of the kidney or cyst, which had undergone fatty degeneration. From the same portions, *oxalate of lime* was also extracted.

On boring into the centre of the calculus, from this point, its interior, the great body of the stone, in fact, was found to be of a hard, gritty nature, and of a grayish-white colour. This was found, on analysis, to consist of large crystals of *oxalate of lime*, resembling, beneath the microscope, angular fragments of silica, together with a small portion of *carbonate of lime*.

To review, then, the calculus is composed of—1st, an outside layer of some unknown black colouring matter; 2d, of portions of metamorphosed animal tissue; 3d, of oxalate and carbonate of lime.—*Boston Med. and Surg. Journ.*, Nov. 6, 1862.

Case of Poisoning from the Pollen of the Common Yellow Tiger Lily.—Dr. Jeffries Wyman read before the Boston Society for Medical Improvement (Oct. 27th) the following report of a case by Dr. R. T. Warren, of Waltham, Mass.:—

"Mrs. B. was making a call at a neighbour's, having with her a little daughter, 4 years old. The child was 'perfectly well,' the mother said, and had been so. It played with another little girl, and did not go out of the room during the call. The little girl came to Mrs. B., requesting her to go and see Fanny, the name of the child. Mrs. B. went, and found Fanny rubbing her nose very violently. Soon there was a profuse discharge of mucus from the nose, coloured yellow. The mother questioned the child, and ascertained that she had reached her hand out of the window, taken an anther from a tiger lily, and passed it into the right nostril. The child pointed out the lily, and the mother found just one anther missing. Mrs. B. was particular in her inquiries, and the child was positive in stating what she had done. Vomiting soon followed the discharge of mucus from the nose. This consisted at first of chyme, having no appearance of undigested food, and was followed by vomiting of mucus, coloured yellow, the same as the discharge from the nose. The child then wanted to go to sleep. The mother took her home, and then sent for me. I saw her at 6 P.M., Wednesday, August 13, about an hour after the anther was passed into the nose. The child appeared sleepy, but was easily roused, and was intelligent. Vomiting of mucus, tinged yellow, occurred while I was present. The yellowness did not seem to be caused by bile. The symptoms did not seem at all alarming. Not aware that the tiger lily possessed any poisonous properties, I felt no anxiety, and

went away, after prescribing remedies, requesting to be called if anything new occurred. I was sent for about 10 P. M., four hours afterwards. Evacuations of the bowels had occurred; at first of natural appearance, then followed discharges coloured yellow, the same as the vomiting and the discharge from the nose, and at last bloody discharges. The vomiting had occurred occasionally, and this at last became bloody. The child was dull, sleepy, and languid. I prescribed astringents, opiates in the form of paregoric, and brandy and water, if the languor should increase. I saw her Thursday morning. A dejection, quite bloody, occurred between 1 and 2 o'clock A. M., and after that the dejections were checked. She was relieved of the vomiting. The child seemed languid, rather sleepy; no wandering. The eyes had a dull, reddish injection. At 4 P.M., same day, appearance of the child much the same as in the morning. The right nostril was nearly closed; membrane of both nostrils very pale. Some discharge of clear, thin mucus. Friday morning.—The child looked brighter. Same reddish injection of the eyes. No urine had been passed during the last twenty-four hours. Slight feverish symptoms. No delirium. 7 P. M., Friday.—No urine had been passed. Several dejections, dark coloured, very offensive. Some fever during the day, slight delirium and startings. Some nausea. Was called to her about 1 o'clock, Saturday morning. Shortly before she had a large, dark-coloured, very offensive discharge, and immediately began to sink. She died a little before 4 o'clock, about fifty-nine hours after passing the anther into the nostril."—*Boston Med. and Surg. Journ.*, Nov. 6, 1862.

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Can Pregnancy follow Defloration in Rape, when force simply is used?—This question is discussed by Dr. E. S. F. ARNOLD, of Yonkers, in a late No. (Nov. 29th) of the *Am. Med. Times*. He maintains with plausibility that it is "as impossible for a woman to conceive while under the influence of terror, shock, and nervous exhaustion, as it would be for a man to perform the act of intercourse while prostrated by similar agencies.

"As might be supposed, the same influences affect powerfully the uterus during the whole after period of gestation. What is more likely to produce miscarriage than a fright, or any sudden shock to the nervous system? Is it then reasonable to suppose, that while terror, or strong and painful emotions, especially those of a sudden character, will affect the uterus so powerfully as to cause it to lose its contents, that it can be independent of them during coitus; that it shall, in fact, be independent of them at one moment only to become peculiarly sensitive to them from that time forward?

"While then the uterus is admitted to be sufficiently independent of the mere will, it certainly cannot be proved that conception may occur during a first and forcible coitus, by citing cases to show that it may follow the exhibition of narcotics or sedatives; on the contrary, to reach such a case as I have started with at the commencement of this article, we have to show that it may occur under circumstances of an entirely opposite character, viz., those of intense and overwhelming excitement of a painful kind. I can believe that a woman of virtuous impulses may be so overcome by passion excited in resisting a sudden assault, that a vigorous opposition may subside into passive submission, and that impregnation may result, but then she becomes a consenting party in the eye of the law. It is not a rape. I can also readily conceive that, impelled by shame, she may stoutly assert that she had resisted to the extent of her power, and her antecedents and subsequent conduct may lend undue weight to her statements in the absence of positive proof, which it is impossible to obtain. The older writers, then, may not be so far wrong after all, when they assert that pregnancy shows consent (at least where no other means than actual exertion of strength to accomplish the act are used), that is, such consent as would reduce the crime from that of rape in law to a mere assault."

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Rupture of Uterus; Cæsarean Section.—Dr. L. R. HOLMEAD records (*Chicago Med. Journ.*, Dec. 1862) a case of rupture of the uterus in a fifth labour, all the former ones having been severe and prolonged. Dr. Byford, who was called in, performed the Cæsarean operation and extracted placenta and child, both of which were found in the peritoneal cavity. It is not stated whether the child was living or dead. The patient died seven days after.